No. 86-1281

Supreme Court, U.S.
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IN THE

Supreme Court of the United States

OCTOBER TERM, 1986

QUME CORPORATION,

Petitioner,

vs.

UNITED STATES INTERNATIONAL TRADE COMMISSION,

—and—

TRIUMPH-ADLER AKTIENGESELLSCHAFT, ADLER-ROYAL BUSINESS MACHINES, INC. NAKAJIMA ALL CO., LTD., SHARP ELECTRONICS CORPORATION and SHARP CORPORATION,

Respondents.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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QUESTIONS PRESENTED

1. Has the Court of Appeals for the Federal Circuit ("CAFC") improperly refused to apply to patent cases on appeal from the International Trade Commission ("ITC") the standard of appellate review mandated by *Universal Camera Corp. v NLRB*, 340 U.S. 474 (1951)?

2. Has the CAFC, in applying the "substantial evidence" test of appellate review to a finding of patent invalidity by the ITC, failed to consider and incorporate the higher "clear and convincing" standard of proof required of one who seeks to overcome the statutory presumption of patent validity and to demonstrate patent invalidity?

3. Has the CAFC, by utilizing an improper standard of appellate review of decisions concerning patent validity by the ITC, contravened Congressional intent and jeopardized U.S. trade by impairing the value of the ITC as an inexpensive, expeditious and cost effective alternative forum for American patentees?

Statement Pursuant to Rule 28.1

Qume Corporation recently became part of a joint venture company, Alcatel, N.V., formed by ITT Corporation and Compagnie Generale d'Electricite, a corporation of France. Qume is now a wholly owned subsidiary of U.S. Holding Company, Inc. of Delaware, which is a wholly owned subsidiary of Alcatel, N.V., a Netherlands Corporation. Qume Corporation Taiwan, Qume (UK) Ltd., and Qume Caribe, Inc. are affiliates of Qume Corporation.

TABLE OF CONTENTS

	Page
QUESTIONS PRESENTED	i
STATEMENT PURSUANT TO RULE 28.1	ii
TABLE OF CONTENTS	iii
TABLE OF AUTHORITIES	vi
OPINIONS BELOW	1
JURISDICTION	2
STATUTES INVOLVED	2
STATEMENT OF THE CASE	3
A. Introduction	3
B. The Facts	4
1. The Patented Invention	4
2. The Summary Reversal of the ALJ's Findings By A Sharply Divided Commission	5
3. The CAFC's Summary Affirmance	8
REASONS FOR GRANTING THE WRIT	9
I. THE CAFC HAS FAILED TO APPLY TO PATENT CASES THE STANDARD OF APPELLATE REVIEW MANDATED BY THIS COURT IN *UNIVERSAL CAMERA*	10
A. The Standard of Appellate Review Mandated In *Universal Camera* Applies to This Case	10

Page

B. The CAFC Has Correctly Utilized the *Universal Camera* Standard of Appellate Review In *Non*-Patent Cases 12

C. This Is An Even More Compelling Case Than *Jackson* for Applying the *Universal Camera* Standard of Appellate Review ... 14

D. The CAFC Totally Failed to Apply the *Universal Camera* Standard of Appellate Review In This Patent Case 15

E. The CAFC's Summary Affirmance In This Case Is Another Instance, As In *Dennison Manufacturing Co. v. Panduit Corp.*, of the CAFC's Abuse of Its Appellate Powers In the Area of Patents . 16

II. THE CAFC DID NOT INCORPORATE THE "CLEAR AND CONVINCING" EVIDENTIARY STANDARD IN ITS REVIEW AND HENCE FAILED TO UTILIZE THE CORRECT STANDARD OF APPELLATE REVIEW 17

III. THE CAFC'S DECISION DISCOURAGES RESORT TO PROCEDURES DESIGNED BY CONGRESS TO PROTECT AMERICAN BUSINESS FROM UNFAIR FOREIGN COMPETITION 19

CONCLUSION 21

APPENDIX A-1

A. Decision of the CAFC, Dated October 7, 1986 ..... A-1

B. Denial of Petition for Rehearing, Dated November 5, 1986 ..... A-6

Page

C. Denial of Suggestion for Rehearing in banc, Dated November 18, 1986 ..... A-7

D. Notice of Termination of Investigation Based on a Finding of No Violation of Section 337 of the Tariff Act of 1930 .... A-8

E. Commission Action and Order of the ITC A-14

F. Views of ITC Commissioners A-17

1. Views of Chairwoman Stern and Commissioners Eckes, Lodwick and Rohr A-17

2. Additional Views of Chairwoman Stern and Commissioner Rohr A-61

3. Additional Views of Chairwoman Stern and Commissioner Lodwick .. A-70

4. Views of Vice Chairman Liebeler... A-77

G. Statutes Involved A-100

TABLE OF AUTHORITIES

Cases	Page
Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281 (Fed. Cir. 1985), *cert. denied*, ____ U.S. ____, 106 S. Ct. 1201 (1986)	14
Dennison Manufacturing Co. v. Panduit Corp., ____ U.S. ____, 106 S. Ct. 1578 (1986)	3, 9, 16-18,
Hale v. Department of Transportation, 772 F.2d 882 (Fed. Cir. 1985)	14
In re Orion Co., 71 F.2d 458 (C.C.P.A. 1934)	19
Jackson v. Veterans Administration, 768 F.2d 1325 (Fed. Cir. 1985)	12-17
Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452 (Fed. Cir. 1984)	14
Metz v. Department of Treasury, 780 F.2d 1001 (Fed. Cir. 1986)	12, 14, 16
Naekel v. Department of Transportation, 782 F.2d 975 (Fed. Cir. 1986)	12, 14, 17
National Business Systems, Inc. v. AM International Inc., 743 F.2d 1227 (7th Cir. 1984) *cert. denied* 471 U.S. 1110 (1985)	17

	Page
Penasquitos Village, Inc. v. National Labor Relations Board, 565 F.2d 1074 (9th Cir. 1977)	13
SSIH Equipment S.A. v. ITC, 718 F.2d 365 (Fed. Cir. 1983)	17, 18
Universal Camera Corp. v. National Labor Relations Board, 340 U.S. 474 (1951)	*passim*
Statutes	
5 U.S.C. § 706(2)(E)	2, 17
19 U.S.C. § 1337	2, 3, 5, 20
28 U.S.C. § 1295(a)(6)	3
28 U.S.C. § 1254(1)	2
35 U.S.C. § 102(g)	2, 6
35 U.S.C. § 103	2, 6

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PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

The petitioner Qume Corporation respectfully requests that a writ of certiorari issue to review the judgment and opinion of the United States Court of Appeals for the Federal Circuit entered in the above entitled proceeding on October 7, 1986.

OPINIONS BELOW

There are no reported opinions below. A copy of the unreported opinion of the Court of Appeals for the Federal Circuit ("CAFC") is attached hereto (App. 1-5).[1] Also

[1] Reference to the Appendix to this Petition is hereinafter designated as "App. ____". References to pages in the Joint Appendix filed with the CAFC on appeal are hereinafter referred to as "JA ____".

attached are the opinions by the CAFC denying rehearing (App. 6) and denying rehearing in banc (App. 7). A redacted copy of the Action and Order of the International Trade Commission ("ITC") and the varying views of the respective ITC commissioners also is annexed hereto (App. 8-99).*

JURISDICTION

The judgment of the CAFC affirming the decision of the ITC was entered on October 7, 1986. Petitioner filed a timely petition for rehearing and rehearing in banc. The petition for rehearing was denied by the CAFC on November 5, 1986. The petition for rehearing in banc was denied by the CAFC on November 18, 1986.

This Court has jurisdiction under 28 U.S.C. 1254(1).

STATUTES INVOLVED

5 U.S.C. § 706(2)(E)
19 U.S.C. § 1337
35 U.S.C. § 102(g)
35 U.S.C. § 103

Copies of the above statutes are annexed hereto (App. 100-107).

* Portions of the ITC decision were designated as confidential pursuant to a protective order dated March, 5, 1984; accordingly, the copy of the ITC decision served on respondents and filed with this Court is a redacted version from which confidential information has been removed. One unredacted copy of the ITC decision, however, has been presented to the Court under seal as a "lodging."

STATEMENT OF THE CASE

A. Introduction

Petitioner Qume Corporation ("Qume") developed the first truly letter quality rotary wheel printing system in the early 1970's and obtained a patent for the invention in October 1978 (" '129 patent"). In order to prevent unlicensed foreign competitors from importing products into the United States that infringed Claims 1 and 8 of the '129 patent, Qume instituted the instant action before the International Trade Commission ("ITC") pursuant to 19 U.S.C. § 1337.

The trial before the administrative law judge ("ALJ") lasted over two weeks, involved twenty-one witnesses and resulted in 198 pages of detailed findings and a well reasoned 91 page report by the ALJ in which he found for Qume on all patent and injury issues. Specifically, the ALJ found that Claim 1 of the '129 patent was valid and not obvious and that Claim 8 was valid and not anticipated. A bare majority of the ITC (3 of 5 commissioners) reversed the ALJ's findings on Claim 1 over the dissent of two commissioners; a majority of four commissioners reversed the ALJ's findings on Claim 8 over the dissent of one commissioner. Both the ALJ and the ITC minority found that the evidence was insufficient under the demanding "clear and convincing" standard of proof required to invalidate the '129 patent claims.

Qume appealed the split decision by the ITC to the CAFC.[2] The CAFC totally ignored the standard of appellate review required by *Universal Camera Corp. v. National Labor Relations Board*, 340 U.S. 474 (1951) and simply "rubber stamped" the deficient ITC majority decision in a brief summary opinion. The CAFC's summary decision was thus another instance, as in *Dennison Manufacturing Co. v. Panduit Corp.*, ____ U.S. ____, 106 S. Ct. 1578 (1986), where the CAFC, overconfident

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[2] The CAFC had jurisdiction over the appeal pursuant to 28 U.S.C. § 1295(a)(6).

in its patent expertise, wrongfully interjected its own judgment for that of the trier of fact and, as a result, totally failed to apply the standard of review required of all federal appellate courts.

The immediate impact of the CAFC's decision has been to deprive Qume of millions of dollars in royalties and subject Qume to unrestrained (and unfair) foreign competition. The more far reaching effect of the decision is to exempt the CAFC in patent matters from the form of appellate review this Court has prescribed for *all* federal circuit courts (including the CAFC) and to frustrate the Congressional purpose of creating a forum (the ITC) to which an American patentee can turn to prevent unfair foreign competition in an expeditious and cost effective manner.

B. The Facts

1. *The Patented Invention*

Petitioner Qume, a new start-up company in 1973, designed and developed a letter quality rotary wheel (or "daisy wheel") printing system, which it began marketing in 1974 (JA101).[3] The daisy wheel printer soon became the industry standard for printing systems and has largely displaced electromechanical printers and typewriters (JA 23).

Qume filed for a patent for its invention in 1974 and was granted the '129 patent four years later. The '129 patent describes a daisy wheel printing system which has electronic control features and can vary the intensity with which characters can be printed. This resulted in highly improved print quality

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[3] The rotary wheel printer is also called a "daisy wheel" printer because the printing element, rather than being ball-like as in an IBM typewriter, has a configuration that looks like a spoked wheel or the petals of a flower. At the end of each "spoke" is a character element or "letter" ("W" or "a", etc.) that is printed when the end of the spoke is struck by a hammer.

which made it possible to produce "letter quality" printing with a rotary wheel printer (JA23).[4] It also prolonged the life of print wheels and contributed to a smaller, faster, more reliable printer with fewer moving parts (JA101). Qume's efforts in developing its patented invention were described at the investigative hearing before the ALJ as "super creative" (JA 75).

Qume's market success with its daisy wheel printer system was immediate and substantial. Beginning in 1974, Qume's sales doubled annually and by the late 1970's Qume was enjoying annual sales of over $75 million (JA 101). In 1979, foreign imports which infringed the '129 patent began to appear in the United States and soon flooded the market. Qume, in turn, experienced a levelling off of sales and by 1984 had a projected loss of $16 million (JA 207). While Qume was able to negotiate patent licenses under the '129 patent with fourteen major companies, three importers remained unlicensed.[5] It is with respect to these three importers (and others which subsequently agreed to take licenses) that the instant proceeding was commenced in the ITC for relief under 19 U.S.C. § 1337.

2. *The Summary Reversal of the ALJ's Findings By A Sharply Divided Commission*

A principal defense to Qume's § 1337 action was that the applicable claims of the '129 patent were invalid. Claim 1 covers a daisy wheel printing system with an improved optical signal generating and feedback system for indicating the position of the print wheel (JA29-30). Claim 8 covers control logic for sequential signal operation with a memory device that provides

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[4] "Letter quality" printing requires that all printed characters have adequate and uniform darkness. This requires a range of hammer striking intensity that can run from high (for a large letter like "W") to low (for a small character like a ".") and various levels in between.

[5] The three companies and their two U.S. subsidiaries are respondents in this case.

character position and hammer intensity information for printing purposes (JA 31-32). The respondents claimed that Claim 1 was obvious and hence invalid under 35 U.S.C. § 103 and that Claim 8 was "anticipated" (here previously invented by another in secret) and therefore invalid under 35 U.S.C. § 102(g).

The evidence proffered by respondents to establish Claim 1 invalidity was limited in nature. The principal evidence was the testimony of a single witness ("Bernstein") who opined that three different prior art references could be combined to create the Qume invention (JA 74-75). The other evidence offered for invalidating Claim 1 was a letter to Qume from an attorney in 1983 which at best was inconclusive on the obviousness issue (JA 3615-18).[6]

The ALJ found Bernstein's testimony concerning obviousness to be "unpersuasive" (JA 220) and accepted the contrary testimony of Mr. Beery, a Qume engineer, that the improvement of Claim 1 was "super creative" (JA 75). After discussing the commercial success of Qume's printing system, the ALJ found Claim 1 to be valid.[7]

The ALJ's views on Claim 1 were later cited approvingly by the two commissioners who dissented from the ITC majority decision and found Claim 1 to be valid. ITC Vice Chairman Liebeler noted in her dissent (concurred in by Commissioner

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[6] One item that was not put into evidence or the subject of testimony, yet was subsequently relied upon by both the ITC majority and the CAFC, was a chart submitted with the respondents' brief *after* the hearing before the ALJ was concluded. The chart, which was prepared by counsel for the respondents, purported to compare the '129 patent and the three prior art references.

[7] If an invention goes on to enjoy commercial success, it is less likely it was "obvious" and, hence, unpatentable. In that regard, the ALJ found that Qume printers "have realized a remarkable success in the marketplace" and the improvements of the Qume '129 patent were "key elements in those printers" playing "an important part in that success." (JA 221) The ALJ also made specific findings that Qume's printing systems "practice both claim 1 and claim 8 of the '129 patent" (JA 146-149).

Lodwick) that the ALJ had evaluated "each of the patents separately and then in combination" and had accepted the testimony of two of Qume's witnesses (Messrs. Beery and Grundherr) over the conflicting testimony of respondents' Bernstein (App. 82-84). The dissent further noted that the principal evidence in support of the obviousness defense was Bernstein's testimony, which had properly been found by the ALJ *not* to reflect the abilities of one of ordinary skill in the art (App. 83). The dissent also concurred in the ALJ's findings on commercial success and cited the ALJ's extensive evidentiary analysis with approval:

> This [commercial] success, in conjunction with Mr. Beery's testimony and the thorough analysis of the prior art by the ALJ, provides sufficient support to uphold the ALJ. (App. 84).

The evidence offered by respondents to support their Claim 8 invalidity defense was likewise limited and unpersuasive. The principal evidence offered was the testimony of Mr. Campbell, who testified that, prior to Qume's development, two separate Xerox subsidiaries were working on two separate projects (Diablo Systems' Mark I project and ISS Corporation's Zodiac project) relating to a printing system (JA 93-96). The ITC majority relied on this testimony to find that there had been a sufficient combination of the two projects to constitute a reduction to practice of a system that anticipated Claim 8 (App. 28). Mr. Campbell's uncorroborated testimony included important failures of recollection and confusion about important dates, structures and events.[8]

Dissenting ITC Vice Chairman Liebeler carefully analyzed the record and concluded, based on the evidence presented to the ALJ, that Claim 8 invalidity had not been demonstrated:

> After reviewing the record, I find that there is *no clear and convincing evidence* that this reduction to practice [by the two Xerox subsidiaries] occurred.

* * *

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[8] See, for example, JA 1435-37, 1447 and 1450.

> *Even under the lower preponderance of the evidence standard*, however, Respondents have failed to present sufficient evidence to overcome their burden of proof concerning the reduction to practice of the ISS controller. (App. 78-82; emphasis supplied).

The ITC majority decision reversed the ALJ's finding of validity for both Claim 1 and Claim 8 (App. 37). In so doing, the ITC majority rejected (or ignored) the ALJ's findings concerning patent validity and totally failed to provide any explanation as to why the ALJ's analysis of testimony and evaluation of the credibility of witnesses concerning invalidity were neither considered nor adopted by the ITC majority.[9]

3. *The CAFC's Summary Affirmance*

The CAFC's affirmance of the ITC majority decision was cursory at best (App. 1-5). In a brief unpublished decision, the CAFC totally failed to discuss (1) the ALJ's findings, (2) the dissenting ITC opinion and (3) other evidence that detracted from the ITC's decision. The CAFC, instead, simply "cherry picked" the record for a few items of evidence that tended to support the ITC majority decision. There was no discussion whatsoever of credibility and no evaluation of the ITC majority's failure to give credence to the findings of the ALJ.[10]

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[9] The ITC majority asserted, for example, that the ALJ did not consider the prior art "in combination" (App. 34). To the contrary, the ALJ made *specific findings* (Nos. 109 and 117) on the combination issue (JA 68, 74-75).

[10] The CAFC, for example, never addressed the fact that the ITC erroneously concluded that the ALJ had not considered the prior art in combination (see immediately preceding footnote).

REASONS FOR GRANTING THE WRIT

In light of the CAFC's focal position in the review of patent matters, its departure from appropriate standards of appellate review in patent cases is a matter of serious concern warranting this Court's intervention. That concern is heightened by the fact that ineffective review of decisions of the ITC may well undermine the critical function the commission was designed to serve - *i.e.* the protection of American business faced with unfair competition from abroad. Petitioner's submission, in summary form, is as follows:

1. *Universal Camera* established two requirements for appellate review of an administrative agency's decision: (1) an appellate court reviewing an agency finding under the "substantial evidence" rule of review may not limit its inquiry to those facts which support the agency's decision; instead, the appellate court must look to the *entire* record - *i.e.* including the facts that *detract* from the agency's decision, and (2) a greater factual showing is needed to satisfy the "substantial evidence" rule when an agency has reversed a trial examiner's findings. While the CAFC has followed *Universal Camera* in *non*-patent cases, it has failed to do so in the patent area. Whatever expertise the CAFC may have in the patent area does not justify its failure to provide the appellate review required by *Universal Camera*. This is especially true where, as here, the agency decision in question is sharply divided and overrules the detailed findings of the ALJ without explanation. This case, thus, is yet another instance where the CAFC, as in *Dennison Manufacturing Co. v. Panduit Corp.*, has interjected its own judgment in a patent case for that of the trier of fact.

2. As the CAFC has itself recognized, appellate review under any legal standard ("substantial evidence", "clearly erroneous", etc.) is incomplete unless it also incorporates the standard of proof binding upon the trier of fact. For example, whereas a particular quantum of evidence may be sufficient to satisfy the "substantial evidence" test where the burden of proof is "mere

preponderence of the evidence", the same quantum may be insufficient where the burden of proof is the higher "clear and convincing" standard. The infringers in this case were required to show patent invalidity by the demanding "clear and convincing evidence" test. The CAFC's willingness to accept uncritically and without explanation evidence that was scanty, disputed and grossly lacking in credibility as sufficient under the "substantial evidence" rule of appellate review demonstrates that the CAFC could not possibly have incorporated the "clear and convincing" evidentiary standard into its appellate review. If the CAFC's decision, which approves the finding of patent invalidity on grossly insufficient evidence, is allowed to stand, it will have the effect of destroying the presumption of validity that has been statutorily conferred on patents.

3. The ITC was created to give American business the means to combat unfair competition from abroad in a forum where all wrongdoers could be called to account in a single, expeditious proceeding. The CAFC's failure to provide meaningful review of ITC decisions in accordance with accepted legal standards discourages resort to the ITC and to the remedies it was created to provide.

I.

THE CAFC HAS FAILED TO APPLY TO PATENT CASES THE STANDARD OF APPELLATE REVIEW MANDATED BY THIS COURT IN *UNIVERSAL CAMERA*

A. The Standard of Appellate Review Mandated In *Universal Camera* Applies to This Case

The scholarly opinion of Justice Frankfurter in *Universal Camera Corp v. National Labor Relations Board*, 340 U.S. 474 (1951) has long served as the touchstone for assessing what constitutes proper review of a decision of an administrative agency. *Universal Camera* made it clear that administrative decisions should be reviewed under a "substantial evidence" test that is not limited to evidence supporting the agency's decision, but

takes into account the *entire* record, including evidence which contradicts or detracts from the agency decision. After expressly holding that the same standard applied to agency decisions under the Labor Management Relations Act (29 U.S.C. § 141 *et seq.*) and the Administrative Procedure Act (5 U.S.C. § 1001 *et seq.* [current version at §§ 551-559 and §§ 701-706]), this Court articulated the proper standard of review as follows:

> Whether or not it was ever permissible for courts to determine the *substantiality of evidence* supporting a Labor Board decision merely on the basis of evidence which in and of itself justified it, without taking into account contradictory evidence or evidence from which conflicting inferences could be drawn, the new legislation definitively precludes such a theory of review and bars its practice. *The substantiality of evidence must take into account whatever in the record fairly detracts from its weight....*Congress has merely made it clear that a reviewing court is not barred from setting aside a Board decision when it cannot conscientiously find that the evidence supporting that decision is substantial, *when viewed in the light that the record in its entirety furnishes, including the body of evidence opposed to the Board's view.*

340 U.S. at 487-88 (emphasis supplied).

This Court thus concluded in *Universal Camera* that it was error for the Second Circuit to refuse to consider the trial examiner's findings because the NLRB (the "Board") had rejected them. Moreover, this Court indicated that when an agency has failed to follow the findings of its examiner, its decision would require a *stronger* showing of support than would be necessary in the case where the examiner's findings were affirmed:

> We do not require that the examiner's findings be given more weight than in reason and in the light of judicial experience they deserve. The "substantial evidence" standard is not modified in any way when

> the Board and its examiner disagree. We intend only to recognize that *evidence supporting a conclusion may be less substantial when an impartial, experienced examiner who has observed the witnesses and lived with the case has drawn conclusions different from the Board's than when he has reached the same conclusion*. The findings of the examiner are to be considered along with the consistency and inherent probability of testimony. The significance of his report, of course, depends largely on the importance of credibility in the particular case. To give it this significance does not seem to us materially more difficult than to heed the other factors which in sum determine whether evidence is "substantial."

340 U.S. at 496-497 (emphasis supplied).

B. The CAFC Has Correctly Utilized The *Universal Camera* Standard of Appellate Review In *Non*-Patent Cases

The CAFC has repeatedly applied the *Universal Camera* standard correctly in *non*-patent cases. *Jackson v. Veterans Administration*, 768 F.2d 1325 (Fed. Cir. 1985); *Naekel v. Department of Transportation*, 782 F.2d 975 (Fed. Cir. 1986); *Metz v. Department of Treasury*, 780 F.2d 1001 (Fed. Cir. 1986).

In *Jackson*, the trial examiner's finding of no sexual harassment was reversed by the Merit Systems Protection Board ("MSPB") based on the MSPB's different view of the evidence relating to certain workplace incidents. After quoting the above cited language in *Universal Camera*, the CAFC correctly articulated the applicable standard of review it was required to follow:

> Thus, we must determine whether, considering the *record as a whole*, the agency's evidence is sufficient

> to be found by a reasonable fact-finder to meet the evidentiary burden applicable to the particular case.

768 F.2d at 1330 (emphasis supplied).

After noting in *Jackson* that the MSPB had the *power* to reject a trial examiner's findings, the CAFC, relying on *Universal Camera* and *Penasquitos Village, Inc. v. National Labor Relations Board*, 565 F.2d 1074, 1078 (9th Cir. 1977), reversed the MSPB in part because the MSPB had failed to justify its own reversal of the trial examiner's findings. In so doing, the CAFC followed *Universal Camera* and held that an agency's decision reversing a trial examiner would *not be sustained absent agency justification*:

> The MSPB must afford *special deference* to the presiding official's findings respecting credibility where the presiding official relies expressly or by necessary implication on the demeanor of the witnesses. *On appeal to this court, when a finding by the presiding official of this nature has been reversed by the board, we cannot sustain the board's decision unless the board has articulated a sound reason, based on the record, for its contrary evaluation of the testimonial evidence. The board is not free simply to disagree with the presiding official's assessment of credibility.* This restriction is comparable to one accepted by one of our predecessor courts in holding that great deference must be granted to the trier of fact who has had the opportunity to observe the demeanor of the witnesses, whereas the reviewing body looks only at "cold records."... At the same time, it does not unduly impinge upon the board's ability to review findings of a presiding official. Rather, it simply recognizes the reality that the conduct of a witness while testifying may fairly detract from the written word.

768 F.2d at 1331 (citations and footnote omitted; emphasis supplied).

Jackson has been repeatedly cited with approval by the CAFC in *non*-patent cases. *Naekel v. Department of Transportation*, 782 F.2d 975 (Fed. Cir. 1986); *Metz v. Department of Treasury*, 780 F.2d 1001 (Fed. Cir. 1986); *Hale v. Department of Transportation*, 772 F.2d 882 (Fed. Cir. 1985).

C. This Is An Even More Compelling Case Than *Jackson* For Applying the *Universal Camera* Standard of Appellate Review

The CAFC's adherence in *Jackson* and other *non*-patent cases to the principles articulated by this Court in *Universal Camera* stands in marked contrast to its rejection of those principles in this patent case. This about-face is particularly remarkable because this case is a far more compelling one for the application of *Universal Camera*. First, unlike in *Jackson*, where the standard of proof for the fact finder was "mere preponderence of the evidence", here the applicable proof standard is the much higher "clear and convincing" standard applicable to patents.[11]

Second, the MSPB decision in *Jackson* was without dissent; here, in contrast, *two* of the five commissioners dissented from the finding of invalidity as to Claim 1 and one commissioner dissented in connection with Claim 8. In both cases, the dissent analyzed specific testimony and evidence and concluded that a "clear and convincing" showing of invalidity had not been made (App. 78). Indeed, the ITC dissent concluded that even under the lower "preponderance of evidence" test, invalidity of Claim 8 had not been demonstrated (App. 82).

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[11] Patent invalidity must be shown by "clear and convincing evidence". *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 292 (Fed. Cir. 1985), *cert. denied*, ___ U.S. ___, 106 S.Ct. 1201 (1986); *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1459 (Fed. Cir. 1984).

D. The CAFC Totally Failed to Apply the *Universal Camera* Standard to Appellate Review In This Patent Case

There can be no question that the CAFC failed to apply the standards of appellate review required by *Universal Camera* in this action. First, despite the fact that *Universal Camera* was briefed and cited to the CAFC in oral argument, the CAFC's decision does not mention the case or the appellate standard the case elaborates.

Second, while both *Universal Camera* and *Jackson* call for a careful review of the *entire* record, no such review appears in the cursory CAFC decision. One searches in vain for discussion, or even mention, of the evidence that led the ALJ and dissenting commissioners to reject totally the infringers' invalidity defenses.

Third, *Universal Camera* and *Jackson* confirm that, in reviewing the evidence, the reviewing court must exercise a presumption in favor of the credibility-based determinations of the trier of fact. There is no acknowledgement of this presumption in the CAFC's decision and certainly no indication that the presumption was given effect.

Fourth, the CAFC totally failed to evaluate or even identify the reasons behind the rejection of the ALJ's findings by the ITC majority. Yet, as the CAFC recognized in *Jackson*, identification of those reasons by the agency, and their evaluation by the CAFC, is *precisely* what is required:

> On appeal to this court, when a finding by the presiding official of this nature has been reversed by the board, *we cannot sustain the board's decision unless the board has articulated a sound reason, based on the record, for its contrary evaluation of the*

> testimonial evidence. The board is not free simply to disagree with the presiding official's assessment of credibility.

Jackson, 768 F.2d at 1331 (footnote omitted; emphasis supplied).[12]

Fifth, a fair evaluation of the entire record would have precluded an affirmance of the ITC decision. As described above, the attack upon the validity of Claims 1 and 8 rested in each instance almost exclusively upon the testimony of a single witness. In each instance, the ALJ who was called upon to consider the credibility of this testimony, as well as the countervailing evidence, found the defense testimony unpersuasive.[13] Neither the ITC nor the CAFC has offered a reasoned explanation for rejecting the ALJ's findings. Yet, as this Court recently emphasized, it is the trier of fact, rather than the reviewing court, that is best placed to make the subsidiary factual determinations upon which a determination such as obviousness must ultimately be based. *Dennison Manufacturing Co. v. Panduit Corp.*, ___ U.S. ___, 106 S. Ct. 1578, 1579 (1986).[14]

E. The CAFC's Summary Affirmance In This Case Is Another Instance, As In *Dennison Manufacturing Co. v. Panduit Corp.*, of the CAFC's Abuse of Its Appellate Powers In the Area of Patents

The CAFC's disparate treatment of patent and non-patent appeals seems to arise from the fact that the CAFC, no doubt feeling competent of its patent expertise, is more inclined to

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[12] The CAFC recently reaffirmed in a *non*-patent case that an agency may not overturn a trial examiner's "credibility determinations without articulating a sound reason, based on the record." *Metz v. Department of Treasury*, 780 F.2d 1001, 1003 (Fed. Cir. 1986).

[13] The CAFC has acknowledged in a *non*-patent case that a trial examiner "exercises wide discretion when making findings on credibility." *Metz v. Department of Treasury*, 780 F.2d at 1003. *Accord*, *Jackson v. Veterans Administration*, 768 F.2d at 1331.

[14] As the Seventh Circuit recently pointed out, quoting Justice Stevens when he was still a member of the Seventh Circuit, expert testimony can be very

(footnote continued on following page)

substitute its own judgment in patent cases, rather than limit its activity to proper appellate review of factual findings made below.[15] However, as this Court emphasized in *Dennison Manufacturing Co. v. Panduit Corp.*, well *before* the CAFC's decision in this case, that is *not* the CAFC's proper function. The CAFC, like other courts of appeals, must comply with the established standard of appellate review and set forth the reasons behind its actions where such explanation is, as here, required by *Universal Camera*. To require anything less of the CAFC would run contrary to statute (28 U.S.C. § 706(2)(E)) and the decisions of this Court.[16]

II.

THE CAFC DID NOT INCORPORATE THE "CLEAR AND CONVINCING" EVIDENTIARY STANDARD IN ITS REVIEW AND HENCE FAILED TO UTILIZE THE CORRECT STANDARD OF APPELLATE REVIEW

As acknowledged in *SSIH Equipment S.A. v. ITC*, 718 F.2d 365, 379-83 (Fed. Cir. 1983), the process of appellate review

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important to the issue of obviousness and clearly is subject to credibility judgments. *National Business Systems, Inc. v. AM International Inc.*, 743 F.2d 1227, 1234 (7th Cir. 1984), *cert. denied*, 471 U.S. 1101 (1985) (citation omitted; emphasis supplied).

[15] It is instructive in that regard to contrast the CAFC's summary disposition of Qume's appeal of the ITC's decision with the CAFC's painstakingly thorough analysis of the record of agency decisions in *non*-patent areas. *See, e.g. Naekel v. Department of Transportation*, 782 F.2d 975 (Fed. Cir. 1986).

[16] The nature of the subject matter of the instant dispute (patents) and the agency involved (the ITC) provides additional policy reasons to apply the appellate review standard mandated by *Universal Camera* and *Jackson* to this case. Congress has a strong policy in favor of protecting and advancing the patent process (e.g. invalidity must be shown by "clear and convincing evidence") and has given district courts the exclusive jurisdiction to invalidate a patent. *See National Business Systems*, 743 F.2d at 1232. The ITC, unlike such agencies as the NLRB, was not created to remove an area of the law from the purview of the district courts so as to take advantage of an agency's expertise in the area. Instead, the ITC was simply to serve as an *additional* forum with certain logistical advantages and efficiences available to American patentees. Untoward deference to ITC determinations by the CAFC thus seems especially inappropriate.

invariable utilizes two standards (1) the appropriate test for appellate review and (2) the appropriate test concerning burden of proof at the trial level. The interrelationship of the two tests was explained in *SSIH Equipment* as follows:

> While the standard of review and the standard of proof are distinct concepts, nevertheless, *the degree of proof below affects the appellate decision whether to affirm or reverse, regardless of what standard of review is applicable.* For example, in reviewing whether the evidence supports a finding of fact on a "clearly erroneous" standard, *the decision might be affirmed* if the standard of proof below were "weight of evidence" *and might be reversed* on the same record if the standard of proof were "clear and convincing" evidence. Thus, the *appellate court must first focus on what support is needed for the trial court determination and then review, in accordance with the standard of review permitted in the type of case, whether that finding is properly supported.*

718 F.2d at 383 (emphasis supplied).

It is evident from the CAFC's decision and the record that the CAFC did not incorporate the demanding "clear and convincing evidence" standard when it conducted its appellate review. If the CAFC's decision is allowed to stand, it will seriously impair the statutory presumption of patent validity which, until this decision, could only be rebutted by "clear and convincing evidence."

The wholesale destruction of a valuable patent right warrants, at the least, reasoned justification by the CAFC. None is provided by the CAFC's decision; in fact, no mention is made of the burden of proof and no attempt is made to demonstrate how or why the evidence supporting invalidity can be considered "clear and convincing." A reasoned justification, however, is required by *Dennison Manufacturing Co. v Panduit Corp.*, ____ U.S. ____, 106 S. Ct. at 1579.

III.

THE CAFC'S DECISION DISCOURAGES RESORT TO PROCEDURES DESIGNED BY CONGRESS TO PROTECT AMERICAN BUSINESS FROM UNFAIR FOREIGN COMPETITION

Congress created the ITC and gave it substantial adjudicatory powers in order to assist American business in combatting unfair competition from abroad by providing one forum where a patent owner could obtain jurisdiction over all wrongdoers and where it could prosecute its case expeditiously and cost effectively.

> "Existing law, apart from section 316, is wholly inadequate to protect domestic owners of patents from violation of their patent rights through the importation and sale of infringing articles. Such infringing articles may be and are imported in large quantities and distributed throughout the United States. The owner of a patent, seeking to protect himself, is confronted with the necessity of *proceeding against individual wholesalers or retailers. The resulting multiplicity of suits imposes an impossible burden.* Stoppage of importation of infringing articles through an order of exclusion from entry is the only effectual remedy. The jurisdiction of district courts and the scope of any decree issued by them do not extend to the importation or exclusion of imported merchandise from entry into the United States. Section 316, therefore, as construed by the Tariff Commission in its findings now before the Court of Customs Appeal for review, affords an exclusive remedy."

In re Orion, Co., 71 F.2d 458, 467 (C.C.P.A. 1934), *quoting* 17, Tariff Readjustment Reports on Tariff Bill of 1929, Supp. at 10667 (emphasis supplied).

The CAFC's failure to apply *Universal Camera* and to provide meaningful review of an ITC determination of patent

invalidity, as well as the CAFC's failure to measure ITC findings under a "clear and convincing" standard of proof, makes resort by a patent owner to the processes of the ITC a precarious venture. The advantages offered by the agency's procedures may be offset by concern that ill-considered findings by the agency will be immune from effective challenge on appeal. American patentees will feel constrained to avoid the ITC and, instead, to prosecute disparate and expensive patent litigations in multiple district courts. The very purpose of 19 U.S.C. § 1337 will thus be frustrated.

CONCLUSION

The approach adopted by the court below violates controlling precedents of this Court which establish the governing standard of appellate review. If uncorrected, it will seriously diminish both the presumption of validity statutorily provided to patentees and the usefulness to patentees of the ITC as an alternative, cost-effective forum. This petition should accordingly be granted.

Respectfully submitted,

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Dated: February 2, 1987

APPENDIX

Note: This opinion will not be published in a printed volume because it does not add significantly to the body of law and is not of widespread legal interest. It is a public record. It is not citable as precedent. The decision will appear in tables published periodically.

United States Court of Appeals

for the

Federal Circuit

QUME CORPORATION,

Appellant,

—v.—

UNITED STATES INTERNATIONAL TRADE COMMISSION,

Appellee,

TRIUMPH-ADLER AKTIENGESELLSCHAFT, ADLER-ROYAL BUSINESS MACHINES, INC., NAKAJIMA ALL CO., LTD., SHARP ELECTRONICS CORPORATION, AND SHARP CORPORATION,

Intervenors.

Appeal No. 86-507

DECIDED: October 7, 1986

Before BALDWIN, *Circuit Judge*, MILLER, *Senior Circuit Judge*, and NIES, *Circuit Judge*.

NIES, *Circuit Judge*.

DECISION

Qume Corporation appeals from the final decision of the International Trade Commission (ITC) in investigation No. 337-TA-185, which determined that there was no violation of 19 U.S.C. § 1337 in

the importation into and sale in the United States of certain rotary wheel printing systems. In reaching that decision, the ITC held, *inter alia*, claim 1 of Qume's U.S. Patent No. 4,118,129 (the '129 patent) invalid as obvious under 35 U.S.C. § 103, and claim 8 of the '129 patent invalid as anticipated under 35 U.S.C. § 102(g). Because the ITC applied the correct legal standards and its findings underlying these rejections are supported by substantial evidence,[1] the decision of the ITC is *affirmed*.

OPINION

Validity of Claim 1

We agree with the Commission that the Holter, Kocher, and Dubauskas references, considered as a whole, invalidate claim 1 under 35 U.S.C. § 103.

We reject Qume's argument that the ITC failed to properly define the relevant scope of the art and, consequently, the level of ordinary skill in that art. The Commission correctly included within the scope of the art those references addressing the particular problems with which the inventor was involved, *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 USPQ 871, 876 (Fed. Cir. 1983); *Orthopedic Equipment Co. v. United States*, 702 F.2d 1005, 1009, 217 USPQ 193, 196 (Fed. Cir. 1983), which broadly relate to the optical sensor art. Therefore, the prior art relevant here is not limited to control logic for printing systems. Once the ITC made this determination, it properly found that the person of ordinary skill in the art must be defined to include one with knowledge of and experience in the field of optical encoder and sensor design.

We are also not persuaded by Qume's argument that there is no evidence of a teaching to combine the prior art references. It is well established that it is not only what the references expressly teach, but what they would collectively suggest to one of ordinary skill in the art. *Leinoff v. Louis Milona & Sons, Inc.*, 726 F.2d 734, 739, 220 USPQ 845, 848-49 (Fed. Cir. 1984); *In re Simon*, 461 F.2d 1387, 1390, 174 USPQ 114, 116 (CCPA

1972). The Commission relied on the testimony of Mr. Grundherr, the inventor of the '129 patent, for the finding that his sole contribution to the optical encoder in claim 1 was the addition of a standard feedback loop. In view of Dubauskas' showing of this standard feedback loop for solving the problem of drift in an optical encoder, it follows that one of ordinary skill in the art would be motivated to use this feature for its known and intended purpose with the encoder disclosed in Kocher. The Commission also noted an opinion letter (RXT-175C) written to IT&T by an attorney who, after completing a comprehensive study directed to the validity and enforcement of the '129 patent, questioned the validity of claims 1-7 in light of Dubauskas.

We, therefore, cannot conclude that the Commission erred in holding that claim 1 would have been obvious to a person of ordinary skill in the relevant art.

Qume misrepresents the record in its argument that the ITC ignored Qume's evidence of secondary considerations. The Commission explicitly acknowledged that secondary considerations were indicia of nonobviousness whereupon it specifically noted Qume's evidence of commercial success of printers covered by the '129 patent. The Commission, however, found such evidence insufficient to draw the requisite nexus between that commercial success and the invention's claimed improvements. *See EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907-08, 225 USPQ 20, 26 (Fed. Cir.), *cert. denied*, 106 S. Ct. 131 (1985); *Stratoflex*, 713 F.2d at 1539, 218 USPQ at 879. The Commission similarly found a lack of evidence concerning unexpected results and longfelt need to compel a finding of nonobviousness. *See W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1555, 220 USPQ 303, 314-15 (Fed. Cir. 1983), *cert. denied*, 105 S. Ct. 172 (1984). Thus, the Commission clearly did not ignore Qume's evidence of secondary considerations. Nor are we convinced that the Commission erred in its evaluation of that evidence.

Validity of Claim 8

The Commission held claim 8 invalid as anticipated under section 102(g) based upon its conclusion that the Xerox ZODIAC/Mark I printer system was conceived and actually reduced to practice before the July 1, 1974, filing date of the '129 patent. *See Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1444, 223 USPQ 603, 606 (Fed. Cir. 1984). Qume argues that this "finding" is unsupported by the record. The evidence of record includes the testimony of Mr. Kenneth Campbell, co-inventor of the ZODIAC/Mark I system disclosed in U.S. Patent No. 4,138,719 (the '719 patent) and design leader for the ISS group, who had primary responsibility for the overall ZODIAC system design. Mr. Campbell testified that Fig. 8 of the '719 patent shows the ISS printer control unit that was being used with the Mark I system as of 1972.

Qume cites testimony by Koenig, former Vice President of Development Engineering at Diablo, who was responsible for the Mark I printer, for the proposition that there were constant modifications to the "total" ZODIAC system during the period prior to the critical date. Based on that testimony, Qume asserts that it is unreasonable to conclude that the printing system described in claim 8 was reduced to practice. However, Qume's reliance on Koenig's reference to the total system is misplaced as it is the subject matter of claim 8, not the total system, that must be found to have been reduced to practice. *See Kimberly-Clark*, 745 F.2d at 1444, 223 USPQ at 606.

In order to have an actual reduction to practice, an invention must be tested to sufficiently demonstrate that it works for its intended purpose. *Id.* at 1445, 223 USPQ at 607. Portions of the record cited by the Commission reveal evidence of large scale production runs, testing, and commercial production in 1973-74. This evidence provides a reasonable basis for concluding that the ZODIAC/Mark I system as set forth in claim 8 must have been reduced to practice prior to July 1, 1974.

Qume further asserts that even if the invention of the '719 patent was in existence prior to the filing date of the '129

patent application, it does not meet claim 8 which requires that the memory device be physically located in the printer. We agree, however, with the Commission's finding that claim 8 does not specify where the ROM device should be located, and thus, Qume's argument is without merit.

In view of our affirmance of the invalidity of claims 1 and 8 of the '129 patent, we find it unnecessary to reach the issues of infringement, scope of the domestic industry, injury, and the status of U.S. Patent No. 3,858,509 as prior art against the '129 patent.

FOOTNOTE

1. We note numerous arguments in Qume's opening brief that misconstrue our appellate function by asserting little more than that the ALJ was right and the ITC was wrong. This court does not review the ALJ's initial determination, but rather, reviews the Commission's decision under the standard of review dictated by 5 U.S.C. § 706. 19 U.S.C. § 1337(c) (1982); *American Hosp. Supply Corp. v. Travenol Labs, Inc.*, 745 F.2d 1, 6 & n.15, 223 USPQ 577, 581 & n.15 (Fed. Cir. 1984). A factual finding of the Commission can be overturned only if unsupported by substantial evidence. 5 U.S.C. § 706(2)(E) (1982); *Corning Glass Works v. United States Int'l Trade Comm'n*, No. 85-2632, slip op. at 11 (Fed. Cir. August 27, 1986). The Supreme Court has defined "substantial evidence" as "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consolidated Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938). *See also SSIH Equip. S.A. v. United States Int'l Trade Comm'n*, 718 F.2d 365, 382, 218 USPQ 678, 692 (Fed. Cir. 1983). Of course, this court is not so restricted with respect to the Commission's legal conclusions and will reverse those conclusions found to be in error. 5 U.S.C. § 706; *American Hosp. Supply*, 745 F.2d at 6, 223 USPQ at 581.

United States Court of Appeals for the Federal Circuit

QUME CORPORATION,

Appellant,

v. Appeal No. 86-507

U.S. INTERNATIONAL TRADE COMMISSION,

Appellee,

and TRIUMPH-ADLER AKTIENGESELLSCHAFT, ADLER-ROYAL BUSINESS MACHINES, INC., NAKAJIMA ALL CO. LTD., SHARP ELECTRONICS CORPORATION and SHARP CORPORATION,

Intervenors.

Before BALDWIN, *Circuit Judge*, MILLER, *Senior Circuit Judge*, and NIES, *Circuit Judge*.

ORDER

A petition for rehearing having been filed in this case,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, denied.

The suggestion for rehearing in banc is under consideration.

FOR THE COURT

11/5/86
Date

s/Francis X. Gindhart
Francis X. Gindhart, Clerk

cc: Messrs. Joseph V. Colaianni, Charles H. Nalls, Tom M. Schaumberg, Bernard L. Sweeney and Frederick G. Michaud, Jr.

United States Court of Appeals for the Federal Circuit

QUME CORPORATION,

Appellant,

v. Appeal No. 86-507

U.S. INTERNATIONAL TRADE COMMISSION,

Appellee,

TRIUMPH-ADLER AKTIENGESELLSCHAFT, ADLER-ROYAL BUSINESS MACHINES, INC., NAKAJIMA ALL CO., LTD. SHARP ELECTRONICS CORPORATION AND SHARP CORPORATION,

Intervenors.

ORDER

A suggestion for rehearing in banc having been filed in this case,

UPON CONSIDERATION THEREOF, it is

ORDERED that the suggestion for rehearing in banc is declined.

FOR THE COURT

s/Francis X. Gindhart
Francis X. Gindhart, Clerk

11/18/86
Date

cc: Messrs. Joseph V. Colaianni, Charles H. Nalls, Tom M. Schaumberg, Bernard L. Sweeney and Frederick G. Michaud, Jr.

UNITED STATES INTERNATIONAL
TRADE COMMISSION
WASHINGTON, D.C. 20436

In the Matter of

CERTAIN ROTARY WHEEL PRINTING SYSTEMS

Investigation No. 337-TA-185

NOTICE OF TERMINATION OF INVESTIGATION
BASED ON A FINDING OF NO VIOLATION OF
SECTION 337 OF THE TARIFF ACT OF 1930

AGENCY: U.S. International Trade Commission.

ACTION: Termination of investigation upon a finding of no violation of section 337 of the Tariff Act of 1930.

SUMMARY: Notice is given that the U.S. International Trade Commission has determined that there is no violation of section 337 of the Tariff Act of 1930 (19 U.S.C. 1337) in the above-captioned investigation and has terminated the investigation.

FOR FURTHER INFORMATION CONTACT: Charles H. Nalls, Esq., Office of the General Counsel, U.S. International Trade Commission, telephone (202) 523-1626.

SUPPLEMENTARY INFORMATION: On February 27, 1984, the Commission instituted the investigation in response to a complaint filed on behalf of Qume Corporation, San Jose, California. The Commission published a notice in the *Federal Register* of April 18, 1984 (49 F.R. 8502), which instituted an investigation to determine whether there is a violation of section 337 in the unauthorized importation or sale of certain rotary wheel printing systems, by reason of the alleged (1) coverage of such devices by claims 1 or 8 of U.S. Letters Patent 4,118,129, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States. On July 19, 1985, the Commission determined that there was no violation of section 337 in the investigation in the importation or sale of the rotary wheel printing systems in question.

Copies of the Commission's Action and Order, the opinions issued in connection therewith, and all other nonconfidential documents filed in connection with this investigation are available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 701 E. Street, N.W., Washington, D.C. 20436, telephone 202-523-0161.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: August 12, 1985

CERTIFICATE OF SERVICE

I, Kenneth R. Mason, hereby certify that the attached Commission Decision was served upon the following parties via first class mail and/or mail where necessary on August 15, 1985.

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UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C. 20436

In the Matter of

CERTAIN ROTARY WHEEL PRINTING SYSTEMS

Investigation No. 337-TA-185

COMMISSION ACTION AND ORDER

Introduction

The United States International Trade Commission has concluded its investigation under section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) of alleged unfair methods of competition and unfair acts in the importation of certain rotary wheel printing systems into the United States, or in their sale, the alleged effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States.

The complainant is Qume Corporation of San Jose, California. The respondents named in the Commission's notice of investigation were as follows: Nakajima All Co., Ltd. of Tokyo, Japan; Teletex Communication Corp. of Foster City, California; Olympia Werke Aktiengesellschaft of Wilhelmshaven, Federal Republic of Germany; Olympia USA, of Summerville, New Jersey; Matsushita Electric Industrial Co., Ltd. of Kadoma City, Japan; Matsushita Electric Corp. of America of Secaucus, New Jersey; Sharp Corporation of Osaka, Japan; Sharp Electronics Corporation of Paramus, New Jersey; Tokyo Juki Industrial Co., Ltd. of Tokyo, Japan; Juki Industries of America, Inc. of Saddle Brook, New Jersey; Triumph-Adler Aktiengesellschaft of Nuremberg, Federal Republic of Germany; and Adler-Royal Business Machines, Inc. of Union, New Jersey. On July 13, 1984, the following respondents were joined to the investigation: Towa Sankiden Corp. of Tokyo, Japan; Primages, Inc. of Bohemia, New York; and Primages, Inc. of Hsiu Chu, Taiwan.

This Action and Order provides for the final disposition of investigation No. 337-TA-185 by the Commission. It is based upon the Commission's determination made in public session at the Commission meeting of July 19, 1985, that there is no violation of section 337.

ACTION

Upon review of certain portions of the administrative law judge's (ALJ) initial determination, the Commission has considered: (1) the submissions filed by the parties; (2) the transcript of the evidentiary hearing before the ALJ and the exhibits accepted into evidence; (3) the ALJ's initial determination; and (4) the arguments and presentations made at the Commission's public hearing on May 28, 1985. The Commission, on July 19, 1985, determined that with respect to all respondents in investigation No. 337-TA-185, there is no violation of section 337 of the Tariff Act of 1930 in the importation into and sale in the United States of certain rotary wheel printing systems (Vice Chairman Liebeler dissenting).

ORDER

Accordingly, it is hereby ORDERED THAT—

1. The portions of Respondent's Motion to Strike (Motion No. 185-91C) (as supplemented) upon which the Commission reserved determination at the public hearing on May 28, 1985, are granted;

2. The Joint Motion to Terminate the Investigation as to Respondent Towa on the Basis of a Settlement Agreement (Motion No. 185-87C) is granted;

3. Investigation No. 337-TA-185 is terminated as to all issues and all respondents;

4. The Secretary shall serve this Action and Order and the opinions issued in connection therewith upon each party of record in this investigation and upon the U.S. Department of Health and Human Services, the U.S. Department of Justice, the Federal Trade Commission, and the U.S. Customs Service; and

5. The Secretary shall publish notice of this Action and Order in the *Federal Register*.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: August 12, 1985

VIEWS OF CHAIRWOMAN STERN, COMMISSIONER ECKES, COMMISSIONER LODWICK, AND COMMISSIONER ROHR[1]

On February 15, 1985, the administrative law judge (ALJ) determined that there is a violation of section 337 of the Tariff Act of 1930[2] in the importation and sale of certain rotary wheel printing systems. Specifically, the ALJ found there are unfair acts in that the accused devices manufactured, imported, and sold by respondents infringe U.S. Letters Patent 4,118,129 (the '129 patent), which he held to be valid and enforceable. He further found that the effect or tendency of respondents' unfair acts is to destroy or to substantially injure an efficiently and economically operated domestic industry. The following opinion reflects the Commission's determination reversing this initial determination (ID).[3]

On April 10, 1985, the Commission determined to review certain issues presented by the ID and, on May 28, 1985, held a public hearing.[4] Based upon the hearing, the written submissions of the parties, and the entire record in this investigation, the Commission determined on July 19, 1985 that there is no violation of section 337 in the importation and sale of the accused devices in the United States.[5]

PROCEDURAL HISTORY

On February 27, 1984, the Commission instituted Investigation No. 337-TA-185 in response to a complaint filed by Qume Corp. of San Jose, California (Qume), to determine whether there is a violation of section 337 in the importation and sale of certain rotary wheel printing systems in the United States.[6] Qume's complaint alleged that such importation and sale constitute unfair acts by reason of infringement of claims 1 and 8 of the '129 patent.[7] The complaint further alleged that the effect or tendency of these unfair acts is to destroy or substantially injure an efficiently and economically operated industry in the United States. Complainant Qume requested that the Commission conduct a full investigation and, thereafter, issue a permanent exclusion order and permanent cease and desist orders.

The Commission's notice of investigation named the following respondents: Nakajima All Co., Ltd. of Tokyo, Japan; Teletex Communication Corp. of Foster City, California; Olympia Werke A.G. of Wilhelmshaven, Federal Republic of Germany; Olympia U.S.A., Inc. of Summerville, New Jersey; Matsushita Electric Industrial Co., Ltd. of Kadoma City, Japan; Matsushita Electric Corp. of America of Secaucus, New Jersey; Sharp Corporation of Osaka, Japan; Sharp Electronics Corp. of Paramus, New Jersey; Tokyo Juki Industrial Co., Ltd. of Tokyo, Japan; Juki Industries of America, Inc. of Saddle Brook, New Jersey; Triumph-Adler A.G. of Nuremberg, Federal Republic of Germany; and Adler-Royal Business Machines, Inc. of Union, New Jersey. On March 5, 1984, Judge Mathias was designated to preside over the investigation.[8]

Between March 28 and April 6, 1984, eleven of the twelve respondents filed responses to the complaint and notice of investigation.[9] The ALJ held a preliminary conference to discuss discovery matters on April 16, 1984, at which complainant Qume, the IA, and all respondents except Teletex entered appearances.

On June 8, 1984, the ALJ issued an ID granting Qume's motion to amend the complaint and notice of investigation to include three additional respondents.[10] The Commission decided not to review the ID in a notice issued July 13, 1984, and the following respondents were thereby joined to the investigation: Towa Sankiden Corp. of Tokyo, Japan; Primages, Inc. of Hsin Chu, Taiwan; and Primages, Inc. of Bohemia, New York.[11] On August 21, 1984, the ALJ denied Qume's motion to amend the complaint to add two more respondents.[12]

Upon the motion of the Primages respondents, the ALJ issued an ID designating the investigation "more complicated" and extending the statutory deadline for completion of the investigation by 61 days.[13] The Commission issued a notice of its decision not to review that ID on September 5, 1984.[14]

On August 23, 1984, the ALJ granted the joint motion by Qume and respodnents Olympia Werke A.G. and Olympia

U.S.A., Inc. to terminate the investigation as to the Olympia respondents based upon a settlement agreement.[15] The Commission issued a notice of its decision not to review the ID terminating the Olympia respondents on September 20, 1984.[16] In an ID dated September 14, 1984, the ALJ granted a joint motion to terminate the investigation as to respondents Matsushita Electric Industrial Co., Ltd. and Matsushita Electric Corp. of America on the basis of a settlement agreement.[17] The Commission issued a notice of October 18, 1984, advising of its decision not to review the ID terminating the Matsushita respondents.[18] Both Tokyo Juki Industrial Co., Ltd. and Juki Industries of America entered into a settlement agreement with Qume that was the basis for the ALJ's ID to terminate the Juki respondents on November 29, 1984.[19] Again, the Commission decided not to review the ID and issued a notice to that effect on December 31, 1984.[20]

The Primages respondents entered into settlement and consent order agreements with Qume and were terminated as respondents in an ID dated December 11, 1984.[21] On January 14, 1985, the Commission issued its decision not to review the ID terminating the two Primages respondents.[22]

The ALJ held a prehearing conference on October 29, 1984, and the evidentiary hearing followed immediately thereafter. During the hearing, Qume filed a third motion to amend the complaint and notice of investigation to include an allegation that the effect or tendency of the alleged unfair acts and methods of competition was to prevent the establishment of an efficiently and economically operated industry in the United States.[23] The participating respondents and the IA opposed the motion, which was subsequently denied by the ALJ in the ID.[24] The evidentiary hearing concluded and the evidentiary record closed on November 9, 1984.

On February 15, 1985, the ALJ issued an ID that there is a violation of section 337 in the importation and sale of the rotary wheel printing systems under investigation. Specifically, the ALJ determined that the '129 patent is valid and

enforceable and that the accused devices manufactured, imported, and sold by respondents infringe claims 1 and 8 of the '129 patent. The ALJ further determined that the effect and tendency of respondents' unfair acts is to destroy or substantially injure an efficiently and economically operated domestic industry. Respondents petitioned for review of the ID.[25]

Also on February 15, 1985, the Commission received a joint motion to terminate the investigation as to respondent Towa on the basis of a settlement agreement.[26] The notice period elapsed without comment from the public or other government agencies.

On April 10, 1985, the Commission determined to review the following portions of the ID:

1. Whether U.S. Letters Patent 4,118,129 (the '129 patent) is invalid by virtue of anticipation within the meaning of 35 U.S.C. § 102(g).

2. Whether the '129 patent is invalid as obvious within the meaning of 35 U.S.C. § 103.

3. Whether the '129 patent is invalid for failure to disclose 'best mode' as required by 35 U.S.C. § 112.

4. Whether the '129 patent is unenforceable by reason of inequitable conduct before the United States Patent and Trademark Office in connection with the patent applicant's alleged failure to disclose relevant prior art consisting of the HyType I printer and manual and certain optical encoders manufactured by Litton and Disc.

5. Whether the devices manufactured and imported by respondents infringe claim 8 of the '129 patent. The Commission is especially interested in the effect, if any, of prosecution history estoppel on the question of infringement under the doctrine of equivalents.

6. Whether the importation or sale of respondents' devices has the effect or tendency to destroy or substantially injure an 'industry, . . . in the United States.' [27]

At its hearing on May 28, 1985, the Commission disposed of several pending motions by the parties to strike various submissions.[28] The Commission reserved determination on portions of one of those motions.[29] The Commission then heard oral argument on all issues from complainant and respondents and upon the economic issues, remedy, the public interest, and bonding from the IA.

PARTIES

Complainant Qume is incorporated in California with its principal place of business at 2350 Qume Drive, San Jose, California. Qume, which was purchased by International Telephone and Telegraph Corp. (ITT) in 1978, manufactures printers, floppy disk drives, and cathode ray tube (CRT) terminals. Through its Printer Division, Qume manufactures various rotary wheel printers that practice the '129 patent.[30] Although some printers are still manufactured at the San Jose, California, facility, most of the Printer Division operations were shifted to Qume Caribe, Inc., another wholly-owned subsidiary of ITT, in Las Piedras and Humacao, Puerto Rico, in 1984.[31] Qume also produces a rotary wheel printer, the Virgo, which practices the claims of the '129 patent, through Qume Taiwan, Inc.[32] Qume Taiwan, which was incorporated in 1982, began production of the Virgo printer in June 1984.

Six of the originally-named respondents remain as parties to this investigation. These respondents are: (1) Nakajima All Co., Ltd. (Nakajima), a Japanese company that sells rotary wheel typewriters and printers produced by Nakajima All Precision Co., Ltd.; (2) Teletex Communication Corp. (Teletex), a California corporation that imports and sells rotary wheel printers purchased from Nakajima; (3) Sharp Corporation (Sharp), a Japanese manufacturer of rotary wheel printing systems that are exported to the United States; (4) Sharp

Electronics Corp. (SEC), a New York corporation that imports into and sells in the United States rotary wheel printers manufactured by Sharp in Japan; (5) Triumph-Adler A.G. (Triumph-Adler), a West German corporation that manufactures and exports to the United States rotary wheel typewriters; and (6) Royal Business Machines, Inc. (Adler-Royal), a Delaware corporation that imports and sells rotary wheel typewriters manufactured by Triumph-Adler.

THE PRODUCT AND TECHNOLOGY

The products involved in this investigation are rotary wheel (also known as "daisywheel") printers. Rotary wheel printers are serial impact, "fully formed" character printers.[33] These printers commonly have been employed as components of a word processing system, in which a printer is connected to a computer supporting several word processing work stations. Recently, the introduction of personal and low-cost professional computers has led to the return of "decentralized configuration" word processing systems, in which one printer serves one word processor.[34]

Rotary wheel technology has also been adapted to various types of electronic typewriters. The more sophisticated of these typewriters may contain all the components of a word processing system, including a small central processor; a thin window, liquid crystal or other type of display to show the material to be printed; a keyboard; and a rotary wheel printer.[35] Many of these typewriters may be interfaced with computers to serve as output printers.[36]

Since 1976, complainant Qume has manufactured several models of rotary wheel printers, that range in output speed from 20 to 75 characters per second (cps).[37] Complainant also sells a 20 cps rotary wheel printer manufactured in Japan under license by Tohoku Ricoh Co., Ltd.

Respondent Nakajima manufactures and exports to the United States six models of rotary wheel typewriter and one model of rotary wheel printer, all having an output speed of 13.3 cps.

Respondent Sharp manufactures and exports to the United States five models of typewriter, which are sold by respondent SEC. These typewriters all have an output rate of 20 cps. Finally, respondent Triumph-Adler manufactures typewriters for sale in the United States by respondent Adler-Royal. These machines range in output speed from 10 to 17 cps.

THE PATENT

The '129 patent, entitled "Rotary Wheel Printing System," issued to Willy J. Grundherr on October 3, 1978, and was assigned to complainant Qume.[38] The '129 patent generally relates to an electromechanical printing system in which an electronic control positions a rotary print wheel and activates a hammer to strike a positioned character. The print wheel itself is mounted on a translatable carriage, which moves left and right along a single, horizontal print line. As the carriage/wheel assembly moves from character to character along the line, the print wheel rotates so that the character pad bearing the next character to be printed aligns with a print hammer, also mounted on the carriage. When the carriage stops, the print hammer is activated and strikes the character pad against an inking ribbon and the face of the printing medium (i.e., paper) to print the character. The improvement embodied in the '129 patent consists of an optical intensity adjustment feature, which utilizes precise position control signals to control the position of the carriage and print wheel, and a hammer intensity control feature, which includes a memory device (i.e., the logic control unit) for storing character selection and hammer intensity information and a means for sequentially "reading out" this information.[39]

The origins of the '129 patent are found in the work of its inventor, Mr. Grundherr, who was involved in the early stages of electronic design for rotary wheel printers while employed by Diablo Systems, Inc. as a member of its printer development team.[40] Between April 1971 and December 1971, Mr. Grundherr designed digital and analog circuitry, and an exerciser and a controller for a rotary wheel printer, a prototype of which was exhibited in December 1971 or January 1972.[41] The prototypes

were designed to have two hammer intensities and employed a servomotor to drive the daisywheel/carriage assembly and a magnetic encoder to feed back print wheel position information.

Diablo then redesigned the printer's circuit boards to improve their performance prior to commencing production. This resulted in a printer known as the HyType I and in the issuance to Mr. Grundherr of U.S. Letters Patent 3,858,509 (the '509 patent) entitled "Control Logic for Print Wheel and Hammer of High Speed Printing Apparatus."[42] The '509 patent and the HyType I printer employ a read-only memory (ROM) semiconductor chip that stores binary coded identification "words" corresponding to the location of the print wheel type elements and the hammer intensity information.[43] In the '509 patent, the ROM must be addressed simultaneously for the character location and hammer intensity information.[44]

During his employment with Diablo, Mr. Gundherr also participated in the development of the Mark I printer, a special version of the HyType I for use in a Xerox word processing system. This system was the objective of a Xerox development program called ZODIAC, which was the overall responsibility of ISS, a Xerox subsidiary. The ZODIAC system included the Mark I printer, which was used in conjunction with a separate logic control unit (ISS controller) that directed character position selection and contained information on four hammer intensity levels.[45] Diablo employees were not involved in the development of the logic control unit, which was the responsibility of ISS. The ZODIAC system, including the Mark I printer, (hereinafter referred to as the ZODIAC/Mark I system) became the subject of U.S. Letters Patent 4,138,719 (the '719 patent), which issued on February 6, 1979.[46]

Mr. Grundherr left Diablo/Xerox in May 1973 for Ancilex (later Qume), where he assumed responsibility for developing the electronics for a new printer, as well as for the exerciser and controller for the computer interface to be used with the new printer. Qume personnel, led by Mr. Grundherr, produced a prototype of the new printer by the end of 1973. Patent

Application Serial No. 484,055, which covered the new printer, was filed with the U.S. Patent and Trademark Office (PTO) on July 1, 1974. The application named Willy J. Grundherr as inventor and Qume as assignee. After a protracted prosecution of Application No. 484,055, which involved a number of rejections and subsequent amendments, the PTO patent examiner allowed the '129 patent to issue on October 3, 1978.

PATENT VALIDITY

Under 35 U.S.C. § 282, patents are presumed to be valid. The burden of proving invalidity falls upon respondents.[47] The ALJ rejected respondents' arguments that the '129 patent was invalid (1) as anticipated within the meaning of 35 U.S.C. § 102(g), (2) as obvious within the meaning of 35 U.S.C. § 103, and (3) for failure to disclose "best mode" as required by 35 U.S.C. § 112.

1. *Validity of Claim 8 of the '129 Patent Under 35 U.S.C. § 102(g)*

Respondents argue that the '129 patent is invalid by virtue of anticipation within the meaning of 35 U.S.C. § 102(g).[48] They assert that claim 8 of the '129 patent was anticipated by the ZODIAC/Mark I system, developed by Xerox prior to the invention of the '129 patent, which became the subject of U.S. Letters Patent 4,138,719, issued to one Swanstrom on February 6, 1979.

On the other hand, complainant has contended that there is no clear evidence that the ZODIAC/Mark I system was reduced to practice prior to the filing date of the '719 patent on October 15, 1975.[49] Further, complainant argues that the ZODIAC/Mark I system does not reveal each and every element of the claimed combination in claim 8. Finally, complainant urges that the ZODIAC/Mark I system was concealed and suppressed, and thus, could not have anticipated claim 8 of the '129 patent.

The ALJ determined that the '129 patent was not invalid as anticipated as provided by 35 U.S.C. § 102(g).[50] The ALJ based this determination on the finding that the date of the application for the '719 patent (October 15, 1975) is later than the priority date for the '129 patent (July 1, 1974) and on the finding that Mr. Grundherr, the inventor of the '129 patent, had no actual knowledge of the logic control portion of the ZODIAC system.[51]

The fact that the priority date for the '129 patent antedates the filing date for the '719 patent covering the ZODIAC/Mark I system is not dispositive of the anticipation issue. The language of section 102(g) requires only that the prior invention be conceived and reduced to practice prior to the invention of the patent in controversy.[52] Moreover, the ALJ's finding that Grundherr, the inventor of the '129 patent, lacked knowledge of the ZODIAC/Mark I system was an incorrect legal basis for a conclusion of non-anticipation under 35 U.S.C. § 102(g). For purposes of anticipation under section 102(g), personal knowledge by the patentee of the prior invention is not necessary.[53]

Three facts must be established to find anticipation. First, the prior invention against which the challenged patent is measured must have been conceived and reduced to practice *prior* to the date of application for the patented invention.[54] Evidence of in-house testing may be *prima facie* evidence of conception.[55] Actual reduction to practice requires that an invention be sufficiently tested to demonstrate that it will work for its intended purpose.[56] Second, the prior invention must not have been abandoned, suppressed, or concealed.[57] Third, each and every aspect of the claimed invention must be shown to be within the four corners of the asserted prior art reference.[58]

In this investigation, this legal analysis requires a determination of: (1) whether the ZODIAC/Mark I system was conceived and reduced to practice prior to the invention claimed for the '129 patent; (2) whether the device was concealed, abandoned, or suppressed; and (3) whether every aspect of claim 8 of

the '129 patent was disclosed by the ZODIAC/Mark I system.[59] Based on this analysis we conclude that claim 8 of the '129 patent was anticipated.

First, evidence shows that the ZODIAC/Mark I system was conceived and reduced to practice prior to the invention claimed in the '129 patent. While the date of the patent application is the latest date on which an invention can be deemed to have been reduced to practice, in this case, there is evidence that actual reduction to practice took place at an earlier date. Prototypes of the ZODIAC/Mark I system were built and were operating in purchaer establishments before May 1973.[60] The record further reflects that the commercial production of the ZODIAC/Mark I system began in January or February 1973.[61] The record establishes that this included both the printer unit and the controller. Thus, the ZODIAC/Mark I system was conceived and reduced to practice prior to the filing of the application for the '129 patent on July 1, 1974.

The second prong of the test for anticipation under Section 102(g) asks whether the prior invention was concealed, suppressed, or abandoned.[62] Complainant argues that the ZODIAC/Mark I system invention was concealed and suppressed because it was hidden in a "secretive" development laboratory and because application for the '719 patent was not made until sometime between 2 and 3 years after the reduction of the invention to practice.[63] Although the ID did not make specific findings on concealment and suppression *vis-a-vis* the issue of anticipation, the record, as discussed below, contains evidence showing that the ZODIAC/Mark I system was neither concealed nor suppressed.

Actual sales as well as initial production of the ZODIAC/Mark I system took place in early 1973.[64] Further, a foreign patent was sought in Great Britain for the ZODIAC/Mark I system at the earliest possible time to avoid delays in the United States PTO.[65] Moreover, the delay in filing the U.S. patent application for the ZODIAC/Mark I system appears to have resulted from the sheer length of the application, rather than from

intentional concealment or dilatory patent prosecution.[66] Consequently, the evidence shows that the prior invention was *not* suppressed or concealed. Complainant has failed to meet its affirmative burden to prove suppression or concealment.[67]

As to the third prong of the test for anticipation, *viz.*, whether the prior invention discloses each and every aspect of the claimed invention, the ID speaks only to the fact that the memory portion (the logic control unit) of the ZODIAC/Mark I system was located apart from the printer.[68] (The ALJ did not find that this prevented the prior invention from including all aspects of claim 8 of the '129 patent.) This is the only "difference" between the ZODIAC/Mark I system and the system disclosed in the improvement embodied in claim 8 of the '129 patent.

We agree with the ALJ that control functions in the ZODIAC/Mark I system were carried out by a "controller" unit separate from the printer unit. We also note that existing devices embodying the teachings of the '129 patent have this feature located within the printer unit itself.[69] However, nothing in claim 8 of the '129 patent *requires* that the logic control unit embodied in the claim be located within the printer. Given this fact, a side-by-side comparison of the ZODIAC/Mark I system with claim 8 of the '129 patent reveals that the ZODIAC/Mark I system includes each and every aspect of claim 8.[70] Accordingly, we find claim 8 of the '129 patent invalid by reason of anticipation under 35 U.S.C. § 102(g).

2. *Validity of the '129 Patent Under 35 U.S.C. § 103.*[71]

Respondents argue that claims 1 and 8 of the '129 patent are invalid because they are obvious extensions of existing printer technology.[72] As a preliminary matter, respondents contend that the ALJ improperly narrowed the scope of the relevant prior art to the subject matter of the patent or the intended use of that subject matter, and that he consequently failed to accord proper weight to evidence of pertinent prior art. Further, respondents contend that the ALJ did not properly define the person of "ordinary skill in the art." Respondents argue that when the relevant field of art is defined to include the broad

field of logic design and optical sensor art, the inventions of the '129 patent would have been obvious to a person of ordinary skill in those broader arts.

Specifically, with regard to claim 1, the Sharp respondents contend that the ALJ erred by failing to consider the prior art references (i.e., the Dubauskas, Holter, and Kocher patents) in combination.[73] According to Sharp, the references taken as a whole reveal each and every element of claim 1 of the '129 patent.[74] Moreover, the Sharp respondents contend that the combinations are obvious to the properly-defined person of ordinary skill in the relevant art. Thus, Sharp argues, claim 1 is invalid as obvious under section 103.

With respect to claim 8, all respondents contend that when the relevant art and the level of skill are more broadly defined to include the design of control logic, the improvement embodied in claim 8 would have been obvious.[75] Respondents argue that the HyType I printer (which became the subject of the '509 patent) employed a ROM for the same purpose as the '129 patent, differing only in the manner in which the ROM was addressed to obtain character location and hammer intensity information.[76] The HyType I printer, as evidenced by its maintenance manual and various publications in the field of logic design, demonstrated that the sequential addressing and reading out of ROM "words" described in claim 8 would have been obvious to one of ordinary skill in the field of logic design. Respondents maintain that all of the foregoing prior art, when taken together with two patents in the area of rotary wheel printing system design (the Beery patents), render each and every element of claim 8 invalid as obvious under section 103.

Complainant maintains that the ALJ properly defined the relevant field of art in light of the problems confronted by Mr. Grundherr in inventing the subject matter of the '129 patent (i.e., design and implementation of control logic for printing systems).[77] In addition, complainant urges that the ALJ correctly determined the proper level of ordinary skill in the art in light of the relevant art and the expert testimony adduced at the

hearing.[78] Complainant then argues that the ALJ properly evaluated the evidence on the question of obviousness under section 103.

As to claim 1, complainant argues that none of the prior art references cited by respondents disclose an optical encoder with a feedback loop or a feedback compensation system as claimed in the '129 patent.[79] Complainant contends that the problems faced by the inventor in designing the optical encoder device specified in claim 1 were not recognized by or anticipated in the prior art cited by respondents.[80] Thus, the subject matter of claim 1 would not have been obvious to a person of ordinary skill in the art.

Concerning claim 8, complainant contends that the invention represented therein, taken as a whole, was not rendered obvious by the prior art cited by respondents.[81] Complainant points out that the problems solved by claim 8 are mechanical, electromechanical, and electronic, "all combined."[82] Contrary to respondents' assertions, complainant believes that the general field of "logic design" cannot address the interrelated electromechanical and mechanical problems with whic claim 8 is concerned.[83] Therefore, complainant asserts that the prior art references cited by respondents, which fall only in the broad category of "logic design," are irrelevant to the issue of obviousness under section 103.

The ALJ rejected respondents' arguments that claims 1 and 8 of the '129 patent are invalid as obvious under 35 U.S.C. § 103. Claims 1 and 8 of the '129 patent relate to the optical sensor art and the logic design art, respectively. Claim 1 recites an improvement over the prior art through a particular arrangement of a light source, feedback means, optical sensors, and other components associated with an encoder disc. Claim 8 recites an improvement in a particular control logic means for sequentially accessing certain information to control the movement of the print wheel and the hammer intensity.

In considering the obviousness or nonobviousness of claims 1 and 8, the ALJ first sought to establish the scope and content

of the prior art. He limited the relevant prior art for both claims to the "design and implementation of control logic for certain types of printing systems, particularly rotary wheel printing systems."[84] The ALJ then defined the person of ordinary skill in the relevant art as an "electronics engineer with six to nine months hands-on experience in the design and implementation of control logic for printing systems, either the golf-ball type printing system, or a rotary wheel printing system, or a technician with at least five years experience in the design and implementation of control logic for such a system."[85]

The ALJ found claim 1 nonobvious based upon what he determined were the relevant prior art patents and upon the testimony adduced at the hearing. Specifically, the ALJ found that patents which disclose feedback control of light intensity in optical encoders (the Dubauskas and Holter patents) and an optical incremental rotary position encoder (the Kocher patent) do not render claim 1 obvious.[86] The ALJ also found the testimony of complainant's witness, whom he defined as a person of at least ordinary skill in the art, to be more persuasive than respondents' witness on the question of obviousness.[87]

With regard to claim 8, the ALJ found that, during the relevant time period (1972-74), the use of the ROM in the '129 patent would not have been obvious to a person of ordinary skill in the art.[88] In addition, the ALJ found that neither the HyType I printer, nor the '509 patent covering that printer, renders claim 8 obvious.

In *Graham v. John Deere Co.*, 383 U.S. 1 (1966), the Supreme Court set forth the analytical framework for determining obviousness or nonobviousness under 35 U.S.C. § 103, stating that:

> [T]he scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary

> considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.[89]

The Court of Appeals for the Federal Circuit (CAFC) has held that the section 103 determination is a legal conclusion based on factual evidence.[90] and the factual considerations on which that conclusion is based are those broadly defined in *Graham*.[91]

The CAFC has defined relevant prior art to be that "reasonably pertinent to the particular problem with which the inventor was involved."[92] More precisely, relevant prior art is defined in terms of the problem confronting the inventor.[93] The test is similarity between the elements, problems, and purposes of that problem and the asserted prior art reference.[94]

In inquiries into the level of ordinary skill in an art, the CAFC has observed that:

> The important consideration lies in the need to adhere to the statute, i.e., to hold that an invention would or would not have been obvious, as a whole, when it was made, to a person of 'ordinary skill in the art'--not to the judge, or to a layman, or to those skilled in remote arts, or to geniuses in the art at hand.[95]

The CAFC has listed six factors which are relevant to a determination of the level of ordinary skill in the art: "(1) the educational level of the inventor; (2) the type of problems encountered in the art; (3) the prior art solutions to those problems; (4) the rapidity with which innovations are made; (5) the sophistication of the technology; and, (6) the educational level of active workers in the field."[96] The person of ordinary skill, a hypothetical construct, is charged with knowledge of all that the prior art disclosed at the time of the invention.[97]

a. *Pertinent prior art and person of ordinary skill*

Claims 1 and 8 of the '129 patent relate to optical sensor art and logic design art, respectively. Claim 1 recites an improvement over the prior art through a particular arrangement of a light source, feedback means, optical sensors, and other components associated with an optical encoder disc.[98] Claim 8 recites an improvement in a particular control logic means for sequentially accessing certain information to control the movement of a print wheel and hammer intensity. As noted above, the ALJ defined the relevant field of art for both claims to be "the design and implementation of control logic for printing systems, especially rotary wheel printing systems."[99]

As a preliminary matter, we do not believe that the ALJ improperly narrowed the scope of the relevant prior art *as to claim* 8 by excluding the broad field of logic design.[100] However, we find that the ALJ improperly defined the scope of the relevant prior art as to claim 1. Relevant prior art is that which is "reasonably pertinent" to the problem facing the inventor, and the test is similarity between the elements and purposes of that problem and the asserted prior art reference.[101] The ALJ's definition of the relevant art does not meet that standard in that it ignores one of the key problems faced by the inventor with respect to claim 1, *i.e.*, optical sensing and encoding, and is therefore erroneous as a matter of law.[102] Therefore, we find claim 1 prior art should have been extended to include optical sensor and encoder art.

Consequently, the ALJ also improperly defined a person of ordinary skill in the art for purpose of the section 103 obviousness determinations as to claim 1. We have noted that the ALJ defined the person of ordinary skill in the relevant art as an "electronics engineer with six to nine months hands-on experience in the design and implementation of control logic for printing systems, either the golf-ball type printing system, or a rotary wheel printing system, or a technician with at least five years experience in the design and implementation of control logic for such a system."[103]

Were the invention claimed under the '129 patent solely concerned with printer control logic, the ALJ's definition of a person of ordinary skill in the art would be satisfactory under the six element test set forth in *Environmental Designs, Ltd. v. Union Oil Co. of California.*[104] However, as the invention embodied in claim 1 involved solving problems of optical encoder design, the person of ordinary skill must be defined to include knowledge of/and experience in this field of art.

b. *Validity of Claim 8*

Having established the relevant field of art and a person of ordinary skill in the art, we now must determine the obviousness or nonobviousness of the subject matter of the '129 patent.[105] As to claim 8, our "redefinition" of the relevant art and the person of ordinary skill in that art does not cause us to alter the ALJ's validity analysis under section 103. The ALJ considered evidence and testimony relevant to control logic design for printing systems, and we defer to his evaluation of that evidence. Accordingly, we adopt the ALJ's conclusions upholding the validity of claim 8 under 35 U.S.C. 103.[106]

c. *Validity of Claim 1*

Claim 1 of the '129 patent presents a different analytical problem under section 103. In analyzing the validity of claim 1, the ALJ committed, in our view, three errors and reversal of his conclusion of nonobviousness is required. First, his failure properly to define the relevant prior art and the person of ordinary skill in the art taints his validity determinations. Second, the ALJ did not consider the prior art references (particularly the Holter, Kocher, and Dubauskas patents) in combination. The CAFC has stated that "[c]laims may be obvious in view of *a combination of references*, even if the features of one reference cannot be substituted physically into the structure of the other reference."[107] The ALJ only compared the cited prior art references individually with claim 1 of the '129 patent in making his validity determination.[108] Third, the ALJ ignored probative evidence on the issue of the obviousness of claim 1.

Before the ALJ, respondents introduced confidential documentary evidence calling into question the validity of claim 1.[109] The ALJ should have addressed this evidence in the ID.

In applying the correct legal standards to the validity analysis, the relevant prior art includes optical sensor art. This art includes a number of sensor and encoder patents, particularly the Holter, Kocher, and Dubauskas patents which were thoroughly analyzed on an individual basis by the ALJ.[110] While these references taken *individually* do not show every element of claim 1, taken *together* the three patents reveal every aspect of claim 1.[111]

The crucial inquiry is then, whether a person of ordinary skill in the art could have arrived at the combination.[112] The inventor of the '129 patent, Mr. Grundherr, testified that his sole contribution to the optical encoder in claim 1 was the addition of a feedback loop.[113] Moreover, Mr. Grundherr merely combined standard components with a standard feedback loop and optical encoder to arrive at his invention.[114] While combining standard elements in a unique fashion may be patentable,[115] we are of the opinion that the prior art references, the testimony of Mr. Grundherr as to the standard nature of the invention's elements, and the documentary evidence submitted by respondents show that the claimed combination would have been obvious to the person of ordinary skill in the optical encoder art. Therefore, we conclude that claim 1 of the '129 patent is invalid as obvious under 35 U.S.C. § 103.[116]

3. *Validity of the '129 Patent Under 35 U.S.C. § 112*

The ALJ's findings and conclusions also address the question of whether Claim 1 of the '129 patent was invalid for failure to disclose the "best mode" contemplated by the inventor for carrying out his invention as required by 35 U.S.C. § 112. Respondents contend that the failure of claim 1 and the specification of the '129 patent to disclose a mask between the encoder disk and the photosensors should result in a finding of invalidity. On the other hand, complainant argues that the

use of the mask was non-critical to the '129 patent and was well understood by persons skilled in the art. Therefore, complainant maintains that there was no duty to disclose the mask. The ALJ determined that there was no failure to disclose "best mode" on the grounds that (1) the device will work without the mask, (2) the mask does not relate to the claimed invention, and (3) the inventor did not act in bad faith by attempting to conceal what he felt was the best mode of implementing the invention.[117]

Under 35 U.S.C. § 112, the patent specification "shall set forth the best mode contemplated by the inventor of carrying out his invention." There is no objective standard by which to measure the adequacy of a best mode disclosure.[118] Instead, only evidence of concealment, either accidental or intentional, is to be considered.[119] There is, however, no duty to disclose that which may be readily understood and applied by those skilled in the relevant art.[120]

In light of the foregoing standards, we reach the same result as the ALJ, albeit for different reasons. The intent or "bad faith" requirement imposed by the ALJ is improper because the courts have ruled that accidental concealment of the best mode contemplated by an inventor would be sufficient to invalidate a patent under 35 U.S.C. § 112.[121] The question in this instance is whether Mr. Grundherr did, in fact, conceal the best mode of implementing his invention, i.e., including a mask between the encoder disc and the photosensors.

The issue is somewhat confused. The inventor testified that he employed the mask "just to improve the performance" of his invention.[122] However, he was unable to recall how much the mask improved encoder operation or whether the mask was required for proper operation of the optical encoder.[123] The testimony does reveal only that the optical encoder would work without the mask and that the mask was commercially available.[124]

The record on the best mode issue does not provide clear and convincing evidence mandating invalidation of claim 1 under section 112. The only undisputed evidence is the inventor's

testimony that the mask was commercially available in optical encoders.[125] Both the CAFC and the Commission have held that there is no duty to disclose that which may readily be understood and applied by those skilled in the relevant art.[126] Accordingly, we determine that claim 1 of the '129 patent is not invalid under 35 U.S.C. § 112, because the use of a mask to have been understood and applied by those skilled in the relevant art.

4. *Conclusions Concerning Validity of the '129 Patent*

To summarize, with respect to the validity of the '129 patent we determine:

1. That claim 8 and its dependent claims are invalid by virtue of anticipation as set forth in 35 U.S.C. § 102(g);

2. That claim 1 and its dependent claims are invalid as obvious within the meaning of 35 U.S.C. § 103;

3. That claim 8 and its dependent claims are not invalid as obvious within the meaning of 35 U.S.C. § 113; and,

4. That claim 1 is not invalid under 35 U.S.C. § 112.

ENFORCEABILITY OF THE '129 PATENT

The Commission also determined to review the issue of the enforceability of the '129 patent.[127] The findings of Chairwoman Stern and Commissioner Rohr on this issue are contained in their additional views. Commissioner Eckes takes no position with respect to the issue of enforceability. Commissioner Lodwick concurs in the dissenting views of Vice Chairman Liebeler on this issue.

INFRINGEMENT OF THE PATENT

1. *Introduction*

Our discussion of the alleged infringement of the '129 patent by respondents' accused devices presupposes the validity and

enforceability of the patent. Of course, we have determined that both claims 1 and 8 are invalid under § 102(g) or § 103 respectively and are unenforceable as a result of inequitable conduct by the patentee and his attorney before the PTO. Accordingly, there can be no infringement of the '129 patent by rotary wheel printing systems manufactured or imported by respondents. However, in that the question of infringement has been before the Commission throughout the investigation, we discuss it in this opinion for the sake of completeness.

2. *Infringement of Claim 1 of the '129 Patent*

The Commission did not review the ALJ's findings with respect to the infringement of claim 1 as they do not appear to be clearly erroneous as contemplated by Rule 210.54(a)(1)(II)(A).[128] We concur in the ALJ's determination that the devices manufactured by the only remaining respondent, Sharp, alleged to infringe the patent as to this claim, include each and every element of claim 1 of the '129 patent. However, in view of our determination that claim 1 is invalid and unenforceable, there can be no finding of infringement.

3. *Infringement of Claim 8 of the '129 Patent*

The ALJ determined that respondents' accused devices contain each and every element of claim 8 of the '129 patent or were the substantial equivalent of such elements. However, he did not discuss separately the questions of literal infringement and infringement under the doctrine of equivalents.

Claim 8 includes the following elements:

> (e) means for impressing said print characters against a print medium;
>
> (f) first position indicating means for generating signals representative of the instantaneous position of said print wheel;

(g) means adapted to be coupled to an external data source for receiving a multi-bit character representative of a character to be printed;

(h) means responsive to said print wheel position signals and the character stored in said receiving means for actuating said impressing means;

(i) a memory device having --

(i) a first portion for storing a plurality of multi-bit characters each representative of the location on said print wheel of a different one of said print characters, and,

(ii) a second portion for storing a plurality of individual hammer intensity characters each representative of the intensity with which the associated print character in said first portion is to be impressed against said print medium, different ones of said hammer intensity characters representing different hammer intensities,

(j) means for sequentially fetching (or reading out) the multi-bit location character and the associated hammer intensity character specified by the character stored in said receiving means, and

(k) means coupled to said memory means for converting the individual fetched hammer intensity characters to corresponding actuation signals for said impressing means having a magnitude dependent upon the intensity assigned to the corresponding hammer intensity character.[129]

The major point of contention concerning infringement involved the effect of prosecution history estoppel on claim 8 for the purpose of determining infringement under the doctrine of equivalents.[130] This issue focused on whether claim 8 is limited

to devices having only a single chip memory with two portions from which print wheel location information and hammer intensity information are sequentially read out.

The ALJ rejected respondents' contentions concerning the effect of prosecution history estoppel in limiting the range of equivalents for claim 8.[131] He found, *inter alia*, that Qume amended claim 8 to specify that it defines "the means for actuating the impressing means as including a memory device having a *first portion* for storing a plurality of individual location characters and a *second portion* for storing a plurality of individual hammer intensity characters, and a means for *sequentially* reading out" print wheel location and hammer intensity information.[132] The ALJ went on to determine that the arguments submitted by Qume to the PTO neither limited the memory device to a single ROM having two portions, nor mandated that the print wheel be in position before the hammer intensity information is fetched.

The ALJ apparently based his conclusions concerning sequential read out on the fact that claim 8 was allowed by the patent examiner without specific amendments incorporating Qume's arguments concerning the term "sequential."[133] He further grounded his determination on the finding that the limitations expressed in Qume's remarks to the PTO did not relate to claim 8, despite the fact that the apparent limitations were considered with respect to claims 8 through 14.[134] The ALJ found that the remarks related only to claims 11 to 14, which were amended in the fashion ascribed by respondents to claim 8. Finally, as to the alleged limitation of the claimed memory device to a single ROM, the ALJ found nothing in the prosecution history outside of the preferred embodiment to limit the claim to a single ROM.[135]

Literal infringement of a properly interpreted claim is a question of fact.[136] To ascertain whether an accused device infringes a valid patent, the asserted claims must be compared with that device.[137] If the accused product or process falls squarely within the words of the claim, then infringement is established.[138] Otherwise, a device may still be found to infringe under the doctrine of equivalents.[139]

In "reading" a claim on an allegedly infringing device, one may not compare parts of the description in the patent to the accused product, nor is comparison to be made between the commercial embodiment of the claimed invention and the accused product.[140] Rather, after establishing the scope of the patent, the claims are read on the accused structures.[141]

Where, as is the case in this investigation, a claim is expressed as a means or step for performing a specified function (a so-called "means plus function" claim) without recital of structure, material, or acts in support thereof, the claim will be construed to cover the corresponding structure, material or acts described in the specification and equivalents thereof.[142] Of course, claims are *always* interpreted in light of the patent specification and the prosecution history of the application that led to the patent.[143] However, it is error to read a "means plus function" claim as *limited* to a particular means set forth in the specification.[144] However, the question of whether an accused device performs the equivalent of the function described in the patent may be analyzed using concepts traditionally employed under the doctrine of equivalents.[145]

Closely tied to the foregoing discussion of literal infringement, construction of the claim language, and the doctrine of equivalents is the applicability of the doctrine of prosecution history estoppel. Prosecution history estoppel prevents a patent owner from obtaining the benefit of a claim construction that would revive subject matter surrendered during the prosecution of the patent application.[146] The estoppel applies both to amendments to claims made to overcome rejections based upon prior art *and* to arguments submitted to the PTO to obtain the patent.[147]

One effect of prosecution history estoppel is to limit the doctrine of equivalents.[148] A patent that has been severely limited during its prosecution before the PTO will have only a narrow range between it and the point beyond which prosecution history estoppel applies.[149] In other words, the doctrine of prosecution history estoppel may preclude a patentee from contending

in an infringement action that his claims should be interpreted as if limitations added by amendment or by argument before the PTO were not present or as if abandoned claims, or portions thereof, were still present.[150]

Based upon the applicable legal standards and the evidence of record, we find that the ALJ erred in his determination that the accused devices read on or are equivalent to claim 8 of the '129 patent and determine that, were the '129 patent valid and enforceable, the accused devices do not infringe claim 8. The invention set forth in claim 8 describes a "means for actuating the impressing means as including a memory device having a *first portion* for storing a plurality of individual location characters and a *second portion* for storing a plurality of individual hammer intensity characters, and a means for *sequentially* reading out" print wheel location and hammer intensity information.[151] This language was included in claim 8 by amendment to distinguish the claim over the prior art.[152]

The structure for carrying out the means specified in claim 8 is recited in the specification to the '129 patent as a ROM from which the wheel position and hammer intensity information are sequentially retrieved or "fetched."[153] A device would infringe claim 8 if it copied this means and function or if it were the equivalent thereof. In *D.M.I., Inc. v. Deere & Co.*,[154] the CAFC stated that the establishment of a range of equivalents to evaluate literal infringement of means plus function claims differs from the infringement analysis under the doctrine of equivalents. However, the CAFC did not provide further guidance on this point.[155] On May 20, 1985, the CAFC resolved this ambiguity by holding that the underlying principles of equivalence enunciated in *Graver Tank* are relevant to the literal infringement analysis of a means plus function claim.[156] Therefore, one may look to any form of proof to establish the range of equivalent structures, including evidence which would narrow that range.

In this instance, Qume presented arguments before the PTO which clearly were intended to distinguish claims 8-14 of

the '129 patent from another patent. Those remarks clearly state not only that wheel location and hammer intensity information are sequentially fetched but also that the print wheel *must* be in position before the hammer intensity information is accessed.[157] Contrary to the ALJ's findings, this argument was made prior to discussion of independent claim 11, and the portion of later remarks concerning claim 11 clearly point to the applicability of the limitation to claim 8.[158] These arguments were made to obtain approval of the application, and they limit equivalent structures to those having a memory device from which wheel position and then hammer intensity are sequentially read out, with hammer intensity being fetched *after* the print wheel is in position.

In view of this limitation, the claim does not read on the Sharp devices, and those devices would not infringe under the doctrine of equivalents. The substantial evidence of record supports the ALJ's finding that there is sequential read-out in the Sharp devices.[159] The flaw in the ALJ's findings, and the basis for our conclusion of noninfringement, lies in the fact that the Sharp devices read out wheel position and hammer intensity information *prior* to any positioning of the print wheel.[160] Accordingly, the Sharp machines are neither "equivalent" for purposes of literal infringement of a means plus function patent, nor do they perform the same function in the same way as the claimed invention, which would be necessary in order to find infringement under the doctrine of equivalents.

Similarly, the devices manufactured by Triumph-Adler do not infringe claim 8. In the Triumph-Adler machines, a spoke location code is first addressed in a RAM (random access memory) or ROM, followed by a hammer impact intensity code, which are then stored in a RAM.[161] This information is then transferred to the circuitry for print wheel positioning and hammer firing. The system for obtaining the positioning and intensity information in the Triumph machines is not the particular sequential method to which the '129 patent was limited.[162] Therefore, these devices would neither literally infringe claim 8, nor would they infringe under the doctrine of equivalents.

The devices manufactured by respondent Nakajima present a somewhat different problem with respect to infringement of claim 8. Nakajima has not pointed to evidence of record as to why its devices are neither the functional equivalent of claim 8 nor perform the same function in the same manner to achieve a similar result. In fact, even with the narrowing of the range of equivalent structures mandated by the prosecution history, the Nakajima devices sequentially access wheel location and hammer intensity information in the required order, as well as including the other elements of claim 8 or their equivalents.[163] Accordingly, we agree with the ALJ that the Nakajima devices would infringe claim 8 were that claim valid or the patent enforceable.

DOMESTIC INDUSTRY[164]

The submissions of the parties and the IA on review raised a number of questions relating to the definition of the domestic industry and of imports. These issues include the propriety of joining the *Rotary Wheels I* investigation with this investigation, and the aggregation of imports of settled respondents from both investigations. The ALJ defined the domestic industry as Qume's domestic operations in California and Puerto Rico devoted to the manufacture of the Q series and Sprint series rotary wheel printers which exploit the '129 patent.[165] Although the ALJ found that Qume manufactures two printers, the Virgo and Letter Pro, in Taiwan and Japan, respectively, he concluded that these operations either did not exploit the '129 patent or were not domestic operations for purposes of defining the industry.[166] This portion of the ID has not been challenged, and we concur in this analysis and definition of the industry.

1. *The joinder of the Rotary Wheels I and Rotary Wheels II Investigations*

The ALJ determined that the "circumstances of the present case compel the conclusion that the date of filing of the complaint has less significance than in most section 337 investigations."[167] He found that considering only that part of the

domestic industry which actually exploited the patent and which was adversely affected by importation at the time of the filing of the complaint in this investigation would not be appropriate in light of complainant's allegations that *all* segments of the domestic industry (including the low end of the industry) have been injured.[168] In order to reach the question of injury to all segments of the printer market, the ALJ appears to have relied on the fact that the two investigations involved the same patent and, seemingly, the same imported products, to combine the first and second investigations.[169]

We determine that joinder of the *Rotary Wheels I* investigation with the *Rotary Wheels II* investigation is inappropriate. The CAFC has addressed the question of the proper date for determining the scope of the domestic industry's activities in a section 337 investigation. The CAFC established the date of the filing of the complaint as the date for determining the existence of a domestic industry. In so doing, the CAFC was attempting to take account of the situation in which an industry is destroyed in the course of a Commission investigation. However, by reaching back beyond that date, as has been suggested here, the Commission would be attempting to provide redress to complainants who were not timely in seeking relief or who, perhaps, had ceased to exploit their patent rights by the time of filing the complaint.[170]

We note that the statute, which envisions a prospective remedy, accounts for the "market realities" of destruction of a domestic industry prior to the filing of a complaint by allowing for a claim of prevention of establishment where a complainant is attempting to reenter the previously destroyed industry.[171] Significantly, complainant sought to amend the complaint to include such a claim, albeit in an untimely and prejudicial manner on the day evidentiary hearing commenced.[172] In light of the above, we determine not to join the two *Rotary Wheels* investigations.[173]

3. *Aggregation of imports from Rorary Wheels I with Rotary Wheels II*

In reaching his conclusion that the effect or tendency of respondents' unfair acts is to destroy or substantially injure the domestic industry, the ALJ considered the question of aggregating the imports of respondents in the first investigation with those in this investigation.[174] The ALJ determined that "a finding that the activities of respondents in *Rotary Wheels I* are irrelevant to *Rotary Wheels II* would distort the analysis of the rather complex market environment involved in this case and artificially ignore the realities of the marketplace."[175] He found that the present investigation is essentially a continuation of *Rotary Wheels I* inasmuch as he found that the same patent, type of imported product, and domestic industry are involved, and the periods of investigation overlap.[176] Further, the ALJ noted that the respondents from *Rotary Wheels I* continue to be a significant force in the marketplace and to compete with Qume. For the same reasons that joinder of the two investigations is inappropriate, aggregation of the imports is also inappropriate.

4. *Inclusion of imports from settled respondents*

On two recent occasions the Commission has expressly stated that there must be a finding of an unfair act with respect to the imports of a settled respondent in order to consider the impact of those imports in assessing injury.[177] As to the respondents from *Rotary Wheels I*, all respondents in that investigation settled without admitting the commission of an unfair act and no probative evidence was received as to the activities of those respondents. The ALJ found that the *Rotary Wheels II* settlement agreements imply the commission of unfair acts, thus making consideration of the imports of those settling respondents. The notion that a settlement agreement somehow implies violation is untenable in light of the common knowledge that respondents often settle for reasons other than an awareness that their products are in violation of section 337.

In this investigation, of the 13 settling respondents, only Tohoku-Ricoh has admitted infringement, and the ALJ determined that its imports do not infringe the '129 patent.[178] Accordingly, we determine that consideration of the imports of settled respondents from either investigation is inappropriate.[179]

FOOTNOTES

1. The following abbreviations are used in this opinion: ALJ--Administrative Law Judge; ID--ALJ's Initial Determination; FF--Finding of Fact; TR--transcript of evidentiary hearing before ALJ; CTR--transcript of Commission hearing on ALJ's initial determination on violation and also on remedy, public interest, and bonding; RXT--respondents' technical exhibit.

2. 19 U.S.C. § 1337.

3. The Commission reviewed the ID pursuant to Rule 210.54(a), 19 C.F.R. § 210.54(a).

4. *See* 50 Fed. Reg. 15236 (1985).

5. Vice Chairman Liebeler determined that there is a violation of section 337.

6. Notice of Investigation, 49 Fed. Reg. 8502 (1984).

7. Complainant alleged infringement of claims 1 through 7 by respondents Sharp and SEC, and of claims 8 through 10 by all respondents. However, complainant stipulated that claim 1 is representative of claims 1 through 7 and that claim 8 is representative of claims 8 through 10. ID at 23-24 (FF 31).

8. 49 Fed. Reg. 9629 (1984).

9. ID at 3. Respondent Teletex Communication Corp. (Teletex) neither entered an appearance, nor filed a response to the complaint and notice of investigation.

10. Order No. 13 (1984).

11. Decision Not to Review Initial Determination Joining Respondents, 49 Fed. Reg. 29167 (1984). Towa Sankiden Corp. filed a response to the amended complaint and notice of investigation on August 13, 1984, and Primages, Inc. responded on August 14, 1984.

12. Order No. 28 (1984).

13. Order No. 29 (1984).

14. Determination Not to Review Initial Determination Designating Investigation More Complicated and Extending the Deadline for Completion of Investigation by Sixty-One Days, 49 Fed. Reg. 35873 (1984).

15. Order No. 30 (1984).

16. 49 Fed. Reg. 37861 (1984).

17. Order No. 37 (1984).

18. 49 Fed. Reg. 42051 (1984).

19. Order No. 52 (1984).

20. 50 Fed. Reg. 1138 (1985).

21. Order No. 54 (1984).

22. 50 Fed. Reg. 3039 (1985).

23. Motion No. 185-77.

24. *See* ID at 254-59. Qume's petition for review did not seek review of this portion of the ID, and the Commission chose not to review it *sua sponte*.

25. Rule 210.54(a)(1), 19 C.F.R. § 210.54(a)(1), provides the following standards for granting such petitions for review:

> (A) A finding or conclusion of material fact [in the ID] is clearly erroneous;
>
> (B) A legal conclusion is erroneous, without governing precedent, rule or law, or constitutes an abuse of discretion; or,
>
> (C) The determination is one affecting Commission policy.

26. Motion No. 185-87C. This motion was directed to the Commission because the ALJ had issued the ID, and, therefore, the investigation was before the full Commission rather than the ALJ. On July 19, 1985, the Commission granted the motion to terminate Towa as a respondent.

27. 50 Fed. Reg. 15236 (1985).

28. Motion Nos. 185-89C, 185-91C, and 185-92C.

29. Motion No. 185-91C. On July 19, 1985, the Commission granted the remaining portions of the motion.

30. ID at 142, 144 (FF 259, 263).

31. *Id.* at 149-51.

32. *Id.* at 160 (FF 313).

33. ID at 18 (FF 20).

34. *Id.* at 18-19 (FF 21).

35. *Id.* at 19 (FF 22).

36. *Id.* Such interfacing usually requires relatively expensive additional components.

37. ID at 19-20 (FF 23).

38. *See* Appendix ("App.") at 1-18.

39. Claims 1 and 8 of the '129 patent are representative of these two improvements, respectively. ID at 23-24 (FF 31).

40. Diablo Systems was purchased by Xerox Corporation in 1972.

41. The exerciser and the controller permitted the printer to be driven from a Data General Corp. computer. ID at 28 (FF 36). The controller was an interface between an external data source, while the exerciser was a device to enable testing of printer functions without resorting to the external data source. *See* ID at 32 (FF 46).

42. The '509 patent, which was assigned to Xerox, issued on Jan. 7, 1975.

43. The ROM in the '509 devices and the HyType I printer has a 256 x 8 bit capacity, with 7 lists accommodating the 96 characters on the print wheel and 1 bit containing hammer intensity information.

44. "Addressing" involves calling upon the ROM to retrieve hardware control information for execution by that particular piece of hardware.

45. ID at 31 (FF 44).

46. App. at 21-72.

47. *See, e.g.*, Certain Limited-Charge Cell Culture Microcarriers, Inv. No. 337-TA-129, USITC Pub. 1486 (1984), Views of the Commission at 11.

48. 35 U.S.C. § 102(g) provides that a person shall be entitled to a patent unless: "before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other."

49. *See* Qume's Post-Hearing Brief at 2.

50. ID at 211.

51. *Id.* (The logic control device is also called the ISS controller.) Priority date is the date of invention (*i.e.*, conception and reduction to practice) as evidenced by the filing of a patent application. However, the priority date may be earlier than the date of filing of a U.S. patent application upon proof of conception and reduction to practice upon the filing of an earlier foreign patent application. *See* 35 U.S.C. § 119.

52. *See also* General Motors v. Toyota Motor Co., Ltd., 205 U.S.P.Q. 158, 177 (S.D. Ohio 1979), *rev'd on other grounds*, 212 U.S.P.Q. 659 (6th Cir. 1981); *cert. denied*, 215 U.S.P.Q. 95 (1982).

53. Kimberly-Clark Corporation v. Johnson & Johnson, 745 F.2d 1437, 1445, 223 U.S.P.Q. 603, 607 (Fed. Cir. 1984); *see also* International Glass Co., Inc. v. United States, 159 U.S.P.Q. 434 (Commissioner's Opinion, 1968), *aff'd* 408 F.2d 395, 161 U.S.P.Q. 116 (Ct. Cl. 1969).

54. Kimberly Clark, 745 F.2d at 1445.

55. *Id.*

56. *Id.* Reduction to practice requires "sufficient success" of the invention in the purpose for which it is intended. Kimberly-Clark, 745 F.2d at 1445 (unsuccessful experiments with adhesive not reduction to practice); Barmag Barme-Maschinenfabrick AG v. Murata Mach., Ltd., 731 F.2d 831, 838-39 (Fed. Cir. 1984) (successful test run of yarnmaking machine constituted reduction to practice, even though improvements were necessary to reach stage of commercial marketability); Shurie v. Richmond, 699 F.2d 1156, 1159-60 (Fed. Cir. 1983) (production of crushed metal oxide reduction to practice, despite fact that oxide was of poor quality and not commercially marketable).

57. International Glass Co., Inc. v. United States, 159 U.S.P.Q. 434, 440 (Ct. Cl. 1968).

58. Leinoff v. Lewis Milona & Sons, Inc., 726 F.2d 734, 738 (Fed. Cir. 1984). The date of the application is the constructive reduction to practice of an invention. Of course, a patantee can establish that his invention was conceived and reduced to practice by "swearing back" to the date of actual conception and reduction to practice. *See* 37 C.F.R. § 1.131. However, in this case there is no evidence of reduction to practice of the '129 patent prior to the date of application.

59. *See id.*

60. TR at 1897-98, 2018, 2040, 2062; RXT 98C, 102-03C, 108C.

61. TR at 1878; 1883-85, 1897-98, 1905, 2918, 2040, 2062.

62. *See* International Glass, 159 U.S.P.Q. at 440.

63. Qume's Post-Hearing Brief at 2-3; CTR at 45-46.

64. TR at 1897-98, 2062; RXT 98C, 102-03C, 108C.

65. TR at 2038-39.

66. *Id.* at 2036-37.

67. *See* Gallagher v. Smith, 99 U.S.P.Q. 132, 138 (C.C.P.A. 1953).

68. ID at 89-91 (FF 150-52).

69. *See id.* at 88-92 (FF 149-52).

70. *See* comparison chart, App. at 19-20.

71. Commissioner Lodwick does not join the majority as to this issue and concurs with Vice Chairman Liebeler's dissent.

72. 35 U.S.C. § 103 provides:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

73. Brief of Sharp on Review at 41, 43-47; CTR at 82-83.

74. Brief of Sharp on Review at 49-51.

75. *See* Brief of Triumph-Adler on Review at 29; Brief of Sharp on Review at 52.

76. *See* Brief of Sharp on Review at 59-61.

77. Reply Brief of Qume on Patent Issues at 39-57; CTR at 46-48.

78. *Id.*

79. Reply Brief of Qume on Patent Issues at 39.

80. *Id.* at 40.

81. *Id.* at 46.

82. *Id.* at 58; CTR at 46-47.

83. *See* Reply Brief of Qume on Patent Issues at 58; CTR at 46-47.

84. ID at 214; *see also* FF's 89-102. The ALJ's definition of the relevant prior art does not take into account the optical sensor art considered to be relevant by the patent examiner. ID at 36 (FF 54).

85. *Id.* at 57 (FF 102), 214.

86. *Id.* at 215 (FF 109-12, 116-18).

87. *Id.* at 215 (FF 117).

88. *Id.* at 214-15.

89. 383 U.S. at 17-18.

90. *See* Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535, 218 U.S.P.Q. 871, 876 (Fed. Cir. 1983); Stevenson v. Int'l Trade Comm'n, 612 F.2d 546, 549, 204 U.S.P.Q. 276, 279 (C.C.P.A. 1979).

91. *See* Environmental Designs, Ltd. v. Union Oil Co. of Cal., 713 F.2d 693, 695, 218 U.S.P.Q. 865, 867 (Fed. Cir. 1983); Orthopedic Equipment Co. v. All Orthopedic Appliances, 707 F.2d 1376, 1379, 217 U.S.P.Q. 1281, 1283 (Fed. Cir. 1983).

92. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535, 218 U.S.P.Q. 871, 876 (Fed Cir. 1983).

93. Orthopedic Equipment Co., Inc. v. United States, 702 F.2d 1005, 1009 (Fed. Cir. 1983), *citing* Weather Engineering Corp. of America v. United States, 614 F.2d. 281, 287 (Ct. Cl. 1980).

94. Weather Engineering Corp. of America, 614 F.2d at 287.

95. Environmental Designs, Ltd. v. Union Oil Co. of Cal., 713 F.2d 693, 697, 216 U.S.P.Q. 865, 868-69 (Fed. Cir. 1983).

96. *Id.* at 696, 218 U.S.P.Q. at 868. *See also* Orthopedic Equipment, Co. v. United States, 702 F.2d 1005, 1011, 217 U.S.P.Q. 193, 198 (Fed. Cir. 1983).

97. *See, e.g.*, In re Grout, 153 U.S.P.Q. 742, 744 (C.C.P.A. 1967). We further note that one of the CAFC's predecessor courts, the U.S. Court of Claims, observed: "The days when inventions relating to locks are only made by locksmiths are past us. In today's world, technological breakthroughs which result from the cross-fertilization of minds trained in different disciplines is common." Weather Engineering Corp. of America, 614 F.2d at 286-87. The court went on to state that human knowledge cannot be compartmentalized; rather, prior art must be defined in terms of the nature of the problem facing the inventor. *Id.* at 287.

98. An optical encoder disc is a disc formulated from preferably opaque material which is perforated with a number of openings called timing track slots. A beam of light is passed through these slots, altered, and picked up by photoreceptors. The beam of light is then converted into wheel position signals, which are transmitted to a memory device.

99. ID at 50 (FF 87).

100. In the work upon which claim 8 of the '129 patent is based, Mr. Grundherr was faced with problems unique to printing systems applications. He had to consider logic design for identification of print wheel location and retrieval of hammer intensity signals, which encompassed a variety of electronic and electromechanical problems endemic to printer design. A consideration of the logic design art alone would not address such problems, as the record amply demonstrates. *See* ID 50-56 (FF 87-101).

101. *See* Stratoflex, 713 F.2d at 1535; Weather Engineering Corp. of America, 614 F.2d at 287.

102. The patent examiner considered a number of references concerning the optical encoder and sensor art. ID at 36 (FF 54); 221; 226-27.

103. ID at 57 (FF 102); ID at 214.

104. *See* note 95 and accompanying text.

105. *See* Graham v. Deere, 383 U.S. at 17-28.

106. ID at 212-15.

107. *See* Orthopedic Equipment, 212 U.S.P.Q. at 533 (emphasis supplied).

108. ID at 69-70 (FF 117).

109. RXT 175C.

110. ID at 63-67 (FF 109-12).

111. *See* App. at 73-75.

112. Orthopedic Equipment, 212 U.S.P.Q. at 528.

113. TR at 791; ID at 70-71 (FF 118).

114. TR at 791-92; ID at 70-71 (FF 118).

115. Environmental Designs, 218 U.S.P.Q. at 870.

116. The ALJ also found that "secondary considerations" were further indicia of nonobviousness, based upon the commercial success of printers covered by the '129 patent. ID at 96 (FF 159-60). However, there appears to be insufficient evidence on the record to draw the requisite nexus between that commercial success and the improvements claimed in the invention. *See* Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530 (Fed. Cir., 1983). Moreover, there is a similar lack of evidence concerning other recognized secondary considerations such as unexpected results and long felt need in the industry to compel a finding of nonobviousness. *See, e.g.*, W. L. Gore Associates, Inc. v. Garlock, Inc. 721 F.2d 1540 (Fed. Cir. 1983).

117. ID at 217-18; *see also* ID at 93 (FF 154).

118. In re Sherwood, 204 U.S.P.Q. 537, 544 (C.C.P.A. 1980).

119. *Id.*

120. *Id.*

121. *Id.*

122. TR at 789.

123. *Id.*

124. *Id.* at 789-90.

125. TR at 790.

126. In re Sherwood, 204 U.S.P.Q. at 544; Spring Assemblies and Components Thereof, and Methods for Their Manufacture, Inv. No. 337-TA-88, USITC Pub. 1172 (1981) at 26.

127. 50 Fed. Reg. 15236 (1985).

128. 19 C.F.R. § 210.54(a)(1)(II)(A); *see also* United States v. United States Gypsum Co. 333 U.S. 364, 395 (1948).

129. App. at 10.

130. Under the doctrine of equivalents a device may be held to infringe a patent if it performs substantially the same function in substantially the same way to accomplish the same result. Graver Tank & Mfg. Co. v. Linde Air Products Co., 339 U.S. 605, 608 (1958).

131. ID at 231-36.

132. *Id.* at 234-35 (emphasis in original).

133. *Id.* at 144 (FF 215).

134. *Id.*

135. *Id.* at 142-43 (FF 161).

136. Amstar Corp. v. Envirotech Corp., 730 F.2d 1476, 1481, 221 U.S.P.Q. 649, 653 (Fed. Cir. 1984); Carman Industries, Inc. v. Wahl, 724 F.2d 932, 941 (Fed. Cir. 1983).

137. Graver Tank, 339 U.S. at 607; Amstar Corp., 730 F.2d at 1481, 221 U.S.P.Q. at 653.

138. Graver Tank, 339 U.S. at 607.

139. *Id.* at 608.

140. Amstar Corp., 730 F.2d 1481, 221 U.S.P.Q. 649, 653; ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1578 (Fed. Cir. 1984).

141. Astra-Sjuco, A.B. v. United States International Trade Commission, 629 F.2d 682, 686, 207 U.S.P.Q. 1, 5 (C.C.P.A. 1980); Coleco Industries, Inc. v. United States International Trade Commission, 573 F.2d 1247, 1253, 197 U.S.P.Q. 472, 476 (C.C.P.A. 1978).

142. 35 U.S.C. § 112; D.M.I. Inc. v. Deere & Co., 755 F.2d at 1574.

143. Palumbo v. Don-Joy Co., Appeal No. 84-1691, slip op. at 9-10 (Fed. Cir. May 20, 1985).

144. D.M.I., 755 F.2d at 1574.

145. Palumbo, Appeal No. 84-1691, slip op. at 11 n.4.

146. Thomas & Betts Corp. v. Litton Systems, Inc. 720 F.2d 1572, 1579 (Fed. Cir. 1983); Hughes Aircraft Co. v. United States, 717 F.2d 1351, 1362, 219 U.S.P.Q. 473, 481 (Fed. Cir. 1983).

147. Hughes Aircraft Co., 717 F.2d at 1362, 219 U.S.P.Q. at 481. *See also* Coleco Industries, Inc., v. U.S.I.T.C., 573 F.2d at 1257, 197 U.S.P.Q. at 480; Dwyer v. United States, 357 F.2d 978, 984, 149 U.S.P.Q. 133, 138 (Ct. Cl. 1966).

148. Hughes Aircraft Co., 717 F.2d at 1363, 219 U.S.P.Q. at 482; Autogiro Co. of America, 384 F.2d at 400-01; 155 U.S.P.Q. at 705.

149. Hughes Aircraft Co., 717 F.2d at 1363, 219 U.S.P.Q. at 482.

150. Thomas & Betts Corp., 720 F.2d at 1579; Hughes Aircraft Co., 717 F.2d at 1362.

151. ID at 234 (emphasis in original).

152. *Id.*

153. This is described in the specification as ROM 91.

154. 755 F.2d 1570 (Fed. Cir. 1985).

155. Indeed, the parties differed in their assessment of the effect of *D.M.I. See, e.g.*, CTR at 80-82; 115.

156. Palumbo, slip op. at 11.

157. ID at 117-18 (FF 215).

158. Amendment of November 3, 1977 at 12-13.

159. ID at 115-16 (FF 212).

160. *Id.* at 116-17 (FF 213-14).

161. *Id.* at 129-30 (FF 233-34).

162. *Id.*

163. *Id.* 137-41 (FF 245-56).

164. The existence of a domestic industry presumes the existence of a valid and enforceable patent, which we assume *arguendo* for purposes of the discussion.

165. *Id.* at 238-39. This aspect of the ID is consistent with prior Commission decision. *See* Certain Molded-In Sandwich Panel Inserts and Methods for Their Manufacture, Inv. No. 337-TA-99, USITC Pub. 1246 (1982).

166. ID at 239.

167. *Id.* at 243.

168. *Id.* at 242.

169. *Id.* Certain Rotary Wheel Printers, Inv. No. 337-TA-145 (Rotary Wheels I) (settled as to all respondents). The Rotary Wheels I investigation was instituted in March 1983.

170. Bally/Midway Mfg. Co. v. United States International Trade Comm'n, 714 F.2d 1117, 1121 (Fed. Cir. 1983).

171. 19 U.S.C. § 1337(a).

172. Motion No. 185-77.

173. We provide additional reasons for non-joinder *infra*.

174. *ID* at 253.

175. *Id.* at 262.

176. *Id.*

177. *See* Certain Foam Earplugs, Inv. No. 337-TA-184, Notice of Commission Decision Not to Review Initial Determination, Deadline for Filing Written Submissions on Remedy, the Public Interest and Bonding, Supplementary Information, 50 Fed. Reg. 4277 (1985); Certain Bag Closure Clips, Inv. No. 337-TA-170, Notice of Commission Decision Not to Review Initial Determination; Deadline for Filing Written Submissions on Remedy, the Public Interest, and Bonding, 49 Fed. Reg. 35872 (1984).

178. ID at 250.

179. Commissioners Eckes and Rohr note that in this investigation the issues concerning the '129 patent are dispositive as to whether there is a violation of section 337. We have joined in the discussion of the issues concerning domestic industry and importation because it is appropriate for the Commission, when it decides to review issues, to decide as many of those issues as it can without engaging in speculation. To proceed further to a consideration of injury and tendency to injure would be speculative in light of the dispositive issues already discussed.

ADDITIONAL VIEWS OF CHAIRWOMAN STERN AND COMMISSIONER ROHR ON ENFORCEABILITY OF THE 129' PATENT

The ALJ considered a number of allegations of inequitable conduct by complainant before the PTO. The Commission chose not to review the ALJ's findings and conclusions concerning several of these allegations and specifically adopts them by reference.[1] However, the Commission elected to review the ALJ's determinations concerning two of the allegations of inequitable conduct. Because of the importance of these issues, we believe it is necessary and appropriate for the Commission to decide them. These determinations subject to review involve:

a. The patent applicant's alleged failure to bring to the attention of the PTO relevant prior art consisting of the HyType I printer and the maintenance manual therefor; and,

b. The patent applicant's alleged failure to advise the PTO of certain optical encoders manufactured by Litton and Disc.[2]

As to these two issues, the ALJ found that no inequitable conduct had taken place based upon the lack of clear and convincing evidence of a "threshold materiality" of the nondisclosed information and/or the lack of a "threshold intent" on the part of complainant regarding the witholding of the information.[3] The ALJ defined "materiality" as the substantial likelihood that the PTO examiner would have considered the information in question important to the allowance of the patent.[4] He defined "threshold intent" as knowledge on the part of the applicant or his attorney that the nondisclosed prior art in question was a more material reference than that before the examiner.[5] Although the ALJ found that the prosecution leading up to the patent was "far from error free," he nevertheless determined that these errors did not involve the level of materiality or intent requisite to a finding of inequitable conduct.[6]

Specifically, the ALJ found that there was no reason for the applicant or his patent attorney to have called the HyType I printer and the printer manual to the PTO's attention unless they actually knew that the '509 patent was not a valid prior art reference or that the HyType I and manual were a more material reference.[7] The ALJ found that the applicant and his attorney were unaware that the examiner had found that the '509 patent was not a valid prior art reference.[8] Based on his finding that complainant was unaware of the PTO's "unannounced determination of the nonapplicability of the '509 patent," the ALJ determined that the nondisclosure of the HyType I printer/manual was merely an oversight or a good faith error in judgment on the part of the applicant or his attorney.[9]

As to the question of the encoder discs manufactured by Litton and Disc, the ALJ stated that the inventory had purchased nonstandard discs from the aforementioned companies.[10] However, the ALJ did not provide an explanation in the ID of why the failure to disclose these discs to the PTO was not inequitable conduct.

In considering the two charges of inequitable conduct on review, we have followed the guidance of the CAFC and of its predecessor the Court of Customs and Patent Appeals. Under the standards applied by the CAFC, the first element of the test for inequitable conduct, which must be proven by clear and convincing conduct, is a threshold degree of materiality of the omitted or false information.[11] Courts have used at least three standards of materiality.[12] However, the CAFC has approved, and we adopt, the test established in PTO rule 1.56(a) (*i.e.*, whether there is a substantial likelihood that a reasonable examiner would have considered the omitted reference or false information important in deciding whether to allow the issuance of the patent) as the appropriate starting point for discussing threshold materiality.[13]

The second element requisite to a finding of inequitable conduct is the "threshold intent." The CAFC has stated that intent and materiality are often interrelated and intertwined.[14] A

lesser showing of the materiality of the withheld information may suffice when an intentional scheme to defraud is established, while a greater showing of the materiality of withheld information necessarily creates an inference that its non-disclosure was "wrongful."[15]

The CAFC has stated:

> That intent need not be proven with direct evidence . . . It may be proven by showing acts the natural consequences of which are presumably intended by the actor . . . Proof of deliberate scheming is not needed; gross negligence is sufficient . . . Gross negligence is present when the actor, judged as a reasonable person in his position, should have known of the materiality of a withheld reference.[16]

Simple negligence, oversight, or a good faith error of judgment are insuffient proof of intent.[17]

Once the elements of threshold materiality and threshold intent are established, the next step of the test for inequitable conduct is to weigh them to determine whether the balance tilts toward a conclusion that inequitable conduct occurred.[18] If, after weighing the two elements, inequitable conduct is found, then *all* of the claims of the patent, not just those claims to which the inequitable conduct is directly connected, are unenforceable[19]

Concerning the question of inequitable conduct in the alleged failure of complainant to make the PTO aware of the Litton and Disc encoders, counsel for respondent Sharp stated at the hearing before the Commission, "I do not believe that there are sufficient facts of record to demonstrate that (inequitable conduct)."[20] No further argument was made on this issue at the hearing or in respondents' briefs. After a review of the record, we agree that there is insuficient evidence to show either the

requisite level of materiality or a threshold level of intent. Accordingly, we determine that the nondisclosure of those discs by the applicant does not render the '129 patent unenforceable by reason of inequitable conduct.

With regard to the failure of the applicant for the '129 patent to disclose the HyType I printer and printer manual, we believe that a determination of inequitable conduct is warranted. The first prong of the test for inequitable conduct, the "threshold materiality" of the nondisclosed information, is satisfied on the face of the ID. The ALJ concluded that the '509 patent revealed all elements of the HyType I printer and printer manual which are material to a determination of the patentability of the invention disclosed in the '129 patent.[21] According to the ALJ, the HyType I printer and printer manual was not more material art, if the '509 patent were a valid reference.[22] Therefore, in the absence of the '509 patent, the HyType I printer and printer manual would necessarily be the most material prior art for purposes of prosecution of the '129 patent.

The '509 patent was *not* a valid prior art reference to the application for the '129 patent because, as a matter of law, an applicant's own invention cannot be prior art to him, absent a statutory bar under 35 U.S.C. § 102(b), (c), or (d).[23] In fact, the patent examiner in charge of the '129 patent application decided that the '509 patent was not a permissible reference and substituted another patent in its place in an office action.[24] The prosecution of the '129 patent then continued to issuance and the applicant never informed the PTO of the existence of the HyType I printer and printer manual.[25] Thus, the examiner was deprived of subject matter that was material to the issuance of the '129 patent.

We now turn to the question of whether there is "threshold intent." Contrary to the ALJ's conclusions on this point, proof of deliberate scheming is not necessary; gross negligence is sufficient.[26] Gross negligence can be found where the reasonable person in the place of an applicant *or his counsel* knew or should have known that the withheld information was material.[27] For

example, in a recent decision the CAFC rejected patent counsel's arguments that one in his position would not have disclosed certain material information on the basis of a "good faith" misunderstanding of the law.[28] The Court determined that the nondisclosed information, which presented a bar to the approval of the patent application under 35 U.S.C. § 102b, was clearly material and should have been recognized as material by patent counsel.[29]

We believe that the siutation presented in this investigation is analogous to that before the CAFC in *Argus*. While deliberate scheming on the part of the '129 patent applicant or his attorney has not been proven, we are convinced that gross negligence on their part has been established.

We note that the attorney employed by the applicant for '129 patent had ten years experience in patent law and had served as a patent examainer at the PTO for three years.[30] An experienced patent counsel should have been aware that an applicant's own invention (i.e., the '509 patent) could not be prior art to him absent statutory bar by 35 U.S.C. § 102(b), (c), or (d). Moreover, the applicant, who is a sophisticated participant in the patent area and who held the patent which arose from the HyType I printer and printer manual, was well-aware of their materiality.[31] Quite simply, the reasonable person in the place of applicant and his counsel should have known that the HyType I printer/manual were highly material.

Although the ALJ also recognized the materiality of the printer and manual, he appears to have relied on the patent examiner's citation of the '509 patent on two occasions as the basis for a conclusion that the applicant and his attorney acted in good faith. The fact that the patent examiner twice cited the '509 patent as prior art in rejecting the application for the '129 patent is not dispositive. Neither is "good faith" reliance.[32] As has been discussed, applicant and patent counsel should have been aware that the '509 patent was not good prior art. Moreover, the record shows that the examiner recognized in the course of the prosecution that the '509 patent was not a good

reference and supplanted the '509 with a new reference (Lundquist).[33] Although patent counsel was not directly made aware of the examiner's opinion as to why the '509 patent was not a good reference, he clearly was cognizant that the '509 patent had been supplanted as a prior art reference.[34] At that point, a reasonable person would have provided the examiner with the HyType I printer/manual, a reference that he should have recognized to be more material in the event of the unavailability of the '509 patent.[35]

In this instance, we determine that the balance tips toward inequitable conduct as a result of the gross negligence of patent counsel. Consequently, we find the '129 patent unenforceable by reason of inequitable conduct before the PTO.

FOOTNOTES

1. By deciding not to review them the Commission has adopted the findings and conclusions of the ALJ in the ID relating to the inequitable conduct counts numbered 2, 3, 4, and 5. ID at 218.

2. ID at 218.

3. *See* J.P. Stevens & Co., Inc. v. Lex Tex Ltd., Inc., 747 F.2d 1553, 1559-60 (Fed. Cir. 1984).

4. ID at 223.

5. *Id.* at 220-21.

6. *Id.* at 219.

7. *Id.* at 220-21. The ALJ determined that the '509 patent revealed all of the elements of the HyType I printer, as disclosed in the manual, which are material to a determination of the patentability of the "invention" disclosed in the '129 patent.

8. ID at 220.

9. *Id.* at 221-22.

10. *Id.* at 228.

11. J.P. Stevens, 747 F.2d 1559.

12. American Hoist & Derrick Co. v. Sowa & Sons, Inc., 220 U.S.P.Q. 763, 772-73 (Fed. Cir. 1984). The standards of materiality include: (1) an objective "but for" standard; (2) a subjective "but for" standard; and, (3) a "but it may have" standard. *Id.*; *see also* J.P. Stevens, 747 F.2d 1559.

13. J.P. Stevens, 747 F.2d at 1559; American Hoist, 220 U.S.P.Q. 763, 773.

14. Digital Equipment Corp. v. Diamond, 653 F.2d 701, 716 (1st Cir. 1981) *cited in* American Hoist, 220 U.S.P.Q. at 773.

15. *Id.*

16. *Id.* (citations omitted).

FOOTNOTES

17. *Id.* Although gross negligence in withholding a reference may serve as a basis for a finding of the requisite intent, this presupposes that an applicant has the reference before him. An applicant is under no duty to conduct a prior art search. American Hoist, 220 U.S.P.Q. 772.

18. American Hoist, 220 U.S.P.Q. 774.

19. *See* In re Clark, 552 F.2d 623, 626 (C.C.P.A. 1975).

20. CTR at 80.

21. ID at 221.

22. *Id.*

23. In re Fout, 675 F.2d at 300 n.2.

24. ID at 221.

25. *Id.* at 50 (FF 86).

26. J.P. Stevens, 747 F.2d at 1560.

27. Argus Chemical Corp. v. Fibre Glass-Evercoat Company, Inc., Appeal No. 84-1418, slip op. at 8 (Fed. Cir. Apr. 4, 1985).

28. *Id.* at 8-9.

29. *Id.* at 9. Similarly, the Court found gross negligence where an applicant failed to disclose a material reference to a Canadian patent rejecting, *inter alia,* the argument that nondisclosure was based on the subjective good faith belief that the Canadian patent was inoperable. Driscall v. Cebalo, 731 F.2d 878, 885 (Fed. Cir. 1984). On the other hand, the CAFC declined to find gross negligence where the applicant above was both unaware of the materiality of the withheld reference and was not trained and experienced in the evaluation of what is or is not prior art. *See* Kansas Jack v. Kuhn, 719 F.2d 1144, 1151-52 (Fed. Cir. 1983).

30. Kujawa Witness Statement 1-3 (adopted by witness TR at 1045); TR at 1068-70.

FOOTNOTES

31. In general knowledge of facts by the applicant will also be imputed to his counsel, absent the special situation in which the applicant is not knowledgeable about the patent process. *See* Kansas Jack, 719 F.2d at 1151-52. This special situation is not applicable to the present situation.

32. *See* Argus, slip op. at 8-9.

33. *Id.* at 44 (FF 74).

34. *Id.* at 44-45 (FF 75).

35. *Id.* at 221.

ADDITIONAL VIEWS OF CHAIRWOMAN STERN AND COMMISSIONER LODWICK

INJURY TO THE DOMESTIC INDUSTRY

Market Segmentation

In assessing the nature of the domestic industry for purposes of determining injury, the ALJ found that "market realities" had resulted in a segmented market.[1] The ALJ found, based upon function or end use, that there are four market segments:

> I. (Low-end)--Machines characterized by portability and compactness; low cost, lower speed printers and typewriters;
>
> II. Office grade machines for small business use; capable of sustaining heavy use, but having limited display and limited memory;
>
> III. Machines covering medium size business uses including full function word processing and small business computers; characterized by greater memory and text editing ability than category II;
>
> IV, (Upper-end)--Higher cost, full function, large business machines ultilizing dedicated or cluster type word processing.[2]

The ALJ determined that the accused imported rotary wheel typewriters and printers are competitive in the low and middle segments of the market, *i.e.*, those segments having machines with speeds ranging up to 30 characters per second (cps).[3] Although complainant produces printers having a rated speed of about 25 cps, these printers are either of foreign manufacture or do not practice the '129 patent. Qume manufactured a low-speed, low-cost printer (the Spring 8/20) in fulfillment of a contract with Raytheon. However, Raytheon left the word processing business, and complainant ceased manufacture of the printer. This was complainant's only exploitation of the

patent in this market segment. Nevertheless, the ALJ found that competition existed between respondent's typewriters and printers and complainant Qume in 1983.

Complainant then developed another low-speed printer called the Virgo in November 1983, but in January 1984 it moved the manufacture of that printer to Puerto Rico in response to the lower cost of production offshore.[4] On this basis the ALJ concluded that complainant was unable to set its prices for low-speed printers produced in the United States at a profitable level and still compete effectively.[5]

The ALJ also found that the effect of respondents' unfair acts has been to destroy the relevant domestic industry. The ALJ based this finding on the belief that this investigation was analagous to *Bally/Midway*. In that investigation, the relevant domestic industry was found to have been destroyed during the period following the filing of the complaint. In this investigation, the ALJ determined that the low speed printer market, and hence the low speed printer industry, ceased to exist when Raytheon terminated its contract with Qume in 1983. As noted previously, such an interpretation of the domestic industry, which defines the domestic industry before the filing of the complaint, goes beyond the bounds set out by *Bally/Midway*.

The ALJ also determined that the effect of respondents' imports was to substantially injure or destroy the domestic industry in the middle and high end of the domestic market. However, the ALJ found that respondents do not compete in the upper end of the market, and that complainant has no market share in the newly emerging low-end rotary wheel printer market.[6] Moreover, the ALJ found that there has been no direct proof that the respondents remaining in this investigation have been the cause of lost sales or customers of Qume.[7] In the ALJ's opinion, the evidence of injury to complainant lies in price erosion, declining profit margins, and excess capacity in Qume's middle range printer operations as a result of the availability of low-cost, low-speed printers and intense import competition in the middle range of the market.[8]

In this investigation, we cannot agree with the ALJ's conclusions with respect to injury to or destruction of the domestic industry. While there is no precise or all-inclusive definition of injury under section 337,[9] the domestic industry must normally establish that the infringer holds, or threatens to hold, a significant amount of the domestic market for the product in question or has made significant sales of that product.[10]

Other factors that the Commission has frequently considered in 337 injury analysis include: (1) the existence of underselling of the imported product; (2) trends in domestic production; (3) employment, profits, and pricing; and (4) opportunities to license or to increase royalties. Neither the presence or absence of any single criterion, nor the specific level of a particular factor is dispositive of substantial injury.[11] The Commission also considers the special characteristics of each industry in assessing the condition of a particular domestic industry.[12]

We find that even if there were unfair acts or methods of competition, the requisite injury had not been proven in this investigation. As the ALJ held, the market for rotary wheel printing systems is segmented into four categories based upon function or end use.[13] Respondents do not compete in the upper range of the market, and the domestic industry has no market share in the low-end of the market, which includes devices in the under 30 cps range.[14] Moreover, there is no independent evidence to show that the domestic industry intends to produce for this market segment.[15] Accordingly, the domestic industry has not established that the accused products hold a significant amount of its domestic market (*i.e.*, the middle and upper end) for rotary wheel printing systems.

We further note that the single low-speed printer manufactured by complainant, the Sprint 8/20, was a slowed-down version of a higher speed Sprint manufactured to fulfill a contract with Raytheon.[16] The number of printers called for under this contract was not produced because Raytheon left the word processing business in 1983 rather than as a consequence of imports of rotary wheel printing systems.[17] Then prior to the filing of its complaint, complainant moved its sourcing for low-end

printers offshore. In light of complainant's departure from the low-end of the market, and its non-involvement in that market segment during the period relevant to this investigation, complainant's attempt to link imports of the accused products to the alleged destruction of its low-end printer manufacturing operations is untenable.[18]

Complainant has argued, and the ALJ held, that respondents' sales of the accused devices have caused injury to complainant's middle-range and upper-end market. The evidence of record does not support that finding. Respondents do not hold a share of the market in which complainant competes. There is no direct evidence that the respondents who remain in the investigation have caused lost sales or lost customers to the domestic industry.[19] Moreover, with the exception of a small decline in the price of complainant's spring model 11/50, prices for the domestic industry's products have generally remained stable from November 1982 to February 1984.[20] As for domestic production, the evidence shows that complainant's total printer production has increased steadily from 1980-83 as have total printer sales and revenue from those sales.[21] Finally, the profit margin figures given by complainant are unsubstantiated by the evidence of record and, therefore, not sufficiently reliable and probative.[22]

The evidence shows, therefore, neither injury to the domestic industry, nor a causal nexus between respondents' alleged unfair acts and injury to the domestic industry.[23] As a result, we determine that an industry in the United States has not been substantially injured or destroyed by the subject imports.

Tendency to substantially injure

The ALJ determined that a tendency to substantially injure the domestic industry has been shown vis-a-vis certain models of respondents' printers and typewriters which are interfaceable with computers.[24] The ALJ based his conclusion on his findings that: (1) these devices enjoy a significant cost advantage in foreign manufacture; (2) respondents have the capacity to manufacture additional quantities of the accused products; and (3) respondents have demonstrated an intent to penetrate the

domestic market.[25] In analyzing tendency to substantially injure, the ALJ found that the existing injury by virtue of price erosion, in combination with the foregoing factors, was sufficient cause to believe that future substantial injury would occur.

If the domestic industry can show that an infringer threatens to hold a significant share of the domestic market in the subject articles or threatens to make a significant amount of sales of those articles, a finding of tendency to substantially injure may be warranted.[26] Moreover, the injury contemplated must constitute a substantive and clearly foreseen threat to the future of the industry not based on allegation, conjecture, or mere possibility.[27]

Assuming *arguendo* that the '129 patent is valid, enforceable and infringed, a finding of tendency to substantially injure is not warranted. The accused devices do not hold a share of the segments of the market in which the domestic industry competes, nor is there any indication that respondents will attempt to enter those segments. Foreign cost advantage and foreign capacity are therefore not relevant. Further, the price erosion argument is not persuasive for reasons discussed above. Therefore, we determine that there is no tendency of the subject imports to substantially injure the domestic industry.

FOOTNOTES

1. ID at 272.

2. *Id.* at 271.

3. *Id.* at 276.

4. *Id.* at 278.

5. *Id.* at 280.

6. *Id.* at 283.

7. *Id.* at 282.

8. *Id.* at 284.

9. *See* Textron Inc. v. United States International Trade Commission, 753 F.2d 1019, 1029 (Fed. Cir. 1985).

10. *Id.*

11. *See, e.g.*, Certain Limited-Charge Cell Culture Microcarriers, Inv. No. 337-TA-129, USITC Pub. 1486 at 41-43 (1984).

12. 753 F.2d at 1029.

13. ID at 269-71.

14. *Id.* at 283.

15. *Id.* at 258.

16. *Id.* at 152 (FF 287).

17. *Id.* at 277.

18. We further note, having found joinder to be inappropriate, the destruction of the industry involved in the *Rotary Wheels I* investigation is irrelevant.

19. *Id.* at 282.

FOOTNOTES

20. *Id.* at 201 (FF's 437-38).

21. *Id.* at 200 (FF 436). Based upon the participation in different market segments by respondents and complainant, its unreasonable to assume that the absence of imports would have increased the domestic industry's production. Rather, it appears that the end result would have been an increase in the production of foreign sourced low-speed printers which are imported by complainant.

22. *See, e.g.*, ID at 284 n.14.

23. *See* Spring Assemblies at 42.

24. These devices are listed in the ID at 288. The ALJ determined that other models of respondents' printers and typewriters are non-competitive and noninjurious. ID at 287. We concur in these findings.

25. ID at 286-87.

26. *See* Certain Combination Locks, Inv. No. 337-TA-45, 50 U.S.P.Q. 1124.

27. Textron, Inc. v. United States Int'l Trade Comm., 753 F.2d 1019 (Fed. Cir. 1985).

Views of Vice Chairman Liebeler

On February 15, 1985, the Administrative Law Judge (ALJ) issued an initial determination (ID) that there is a violation of section 337 in the importation and sale of the rotary wheel printing systems under investigation in Certain Rotary Wheel Printing Systems, Inv. No. 337-TA-185. I would affirm this determination.

The patent in this case, entitled Rotary Wheel Printing System, was issued to Complainant Qume, as assignee, on October 3, 1978. The two independent claims in the patent cover a feedback compensation system for an optical encoder (claim 1) and a hammer intensity control (claim 8), both for use in a daisywheel printing system.[1]

Before addressing the substantive patent issues, I will first consider the proper role for review of Initial Determinations. According to Commission rules, review of the ID can only be granted if (1) a finding or conclusion of material fact is clearly erroneous; (2) a conclusion of law is erroneous, without governing precedent, rule or law, or constitutes an abuse of discretion; or (3) the determination is one affecting Commission policy.[2] Once review is granted, however, all aspects of the case are reviewed *de novo* by the Commissioners.[3] The Commission examines the record to decide whether it agrees with the substantive patent determinations by the ALJ, and the ALJ's determinations with respect to the "economic issues" (i.e., domestic industry, injury).

The statute does not preclude the Commissioners from being the original factfinders in Section 337 cases. However, in view of the complex technical and legal questions arising when patent validity and infringement are at issue, this authority has been delegated to an Administrative Law Judge, and properly so. The ALJ can intensely study the patent issues peculiar to a particular case and render a well-reasoned decision. Because of both statutory time constraints and lack of expertise, it would seem appropriate to defer to the ALJ's determinations on patent matters. Review under a clearly erroneous or substantial

evidence standard would also remove one level of bureaucracy from the appellate process. The Commission could enact such a standard by rulemaking.[4]

This case presents a good example of a complex case.[5] The ALJ studied the technology and the applicable law for a considerable period of time and then made his findings. The Commission then threw out all but the factual record in determining to review. Nonetheless, given the present state of the Commission rules, I must join the majority in reviewing this case *de novo*.

1. *Whether U.S. Letters Patent 4,118,129 (the '129 patent) is invalid by virtue of anticipation within the meaning of 35 U.S.C. § 102(g) (1980).*

Section 102(g) provides in relevant part that a patent shall be issued "unless before the applicant's invention . . . the invention was made in this country by another who had not abandoned, suppressed, or concealed it."[6] Respondents argue that the invention of claim 8 of the '129 patent was anticipated by the Zodiac word processing system and the Mark I printer developed by Xerox. They assert that the Zodiac/Mark I system was conceived and reduced to practice as early as 1972 and that the Zodiac system corresponds to each element of claim 8 of the '129 patent.

The ALJ incorrectly stated that the patent applicant must have had knowledge of the anticipatory art before section 102(g) could operate as a bar to the issuance of a valid patent.[7] No such requirement exists.[8] Because the ALJ found that the lack of knowledge of the applicant was sufficient to bar a section 102 argument, the ALJ did not make certain necessary findings of fact. Thus, there is no finding on whether the ISS controller was reduced to practice prior to the Complainant's invention. After reviewing the record, I find that there is no clear and convincing evidence that this reduction to practice occurred.

Zodiac was the name given to the word processing system under development by Xerox. Diablo Corporation was in charge

of building a printer that could handle proportional spacing and multiple hammer intensities. ISS Corporation undertook development of the controller. The controller, or control unit, contained the circuitry that controlled character position selection and hammer intensity. The controller and the Mark I printer were completely separate.[9]

Grundherr, the inventor under the '129 patent, worked at Diablo on the printer. As noted earlier, he lacked knowledge as to the operation of the ISS controller. Just as this lack of knowledge does not bar a section 102(g) objection, neither does it prove that the ISS controller was reduced to practice. Although the ALJ did explicitly find that the prototypes of the Mark I printer had been built in 1972, he hedged on the issue of the controller,[10] probably because he felt such a finding was unnecessary.

Patents are presumed to be valid.[11] The burden is on the party asserting invalidity to rebut this presumption by clear and convincing evidence.[12] Because the ALJ failed to make the appropriate findings on the issue of reduction to practice, it is left to the Commission to determine whether the record evidence is clear and convincing on this point. I determine that the Respondents have not met their burden.

In their pre- and posthearing briefs, Respondents cite both to the ID and the transcript to support their contention that the ISS controller had been reduced to practice prior to the invention set forth in claim 8 of the '129 patent. Most of the citations to the ID and the transcript relate to the date when the Mark I printer prototypes were first built and available for testing.[13] The ISS controller was separate from the printer and the subject of different problems. For example, the team at Diablo was concerned with print wheels and stepper motors,[14] mechanical problems unassociated with the control logic.

Some excerpts from the transcript do lend support to the Respondents' position. [During one *in camera* session, Mr. Kenneth Campbell, listed as co-inventor of the control logic for the Mark I, testified as follows:

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Q.

?

A.

Q.

?

A. .[15]

Mr. Campbell was subsequently subjected to cross-examination:

Q.

?

A.

Q. ?

A.

.]

Although sales or commerical success are not necessary to provide a reduction to practice, evidence of the commercial success of the ISS controller prior to the actual reduction to practice of the '129 patent certainly would be sufficient to show anticipation. The '129 patent application was filed on July 1, 1974.[16] Mr. Campbell is uncertain as to when sales actually began, and there is scant other evidence on this subject. We must therefore look for testing. Mr. Campbell's testimony *suggests* that the controller may have been reduced to practice as

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early as 1972. However, it is unclear whether the "use" with the Mark I printer in 1972 constituted a reduction to practice. Mr. Campbell, whose recollection of events was shaky, was named as co-inventor of the Zodiac patent. Even this ambiguous testimony must be discarded unless it is independently corroborated.[17]

There is no documentation in the record concerning when the controller operated in a manner that achieved its intended purpose. There seems to be persuasive evidence that Mark I printers were being delivered for testing of the Zodiac system in 1973.[18] Apparently at least one of the printers was to be sent to ISS for testing.[19] Mr. Koenig, who was Director of Engineering for Diablo, testified that

.[20] Testing and some type of "use" began in 1972/73, while commercial success occurred in 1976. Thus, sometime between 1972 and 1976, according to Respondents' witnesses, the ISS controller was reduced to practice.

Some cases have determined that where a research and development program is highly routinized, an actual witnessing of the reduction to practice is not necessary.[21] But independent verification is still required.[22] Despite a voluminous amount of testimony concerning memoranda and letters being sent back and forth, none of it deals directly with the status of the ISS controller.[23]

Thus, the evidence on this point is at best inconclusive. In a recent case, the Court of Appeals for the Federal Circuit (CAFC) held that in an interference case, an administrative proceeding, only a preponderance of the evidence was necessary to establish an actual reduction to practice.[24] Although the instant case is an administrative proceeding, it is more closely analogous to a district court case than to a proceeding before the Board of Patent Interferences. The proper evidentiary burden in district court, and hence upon Respondents, is one of clear and convincing evidence.[25] Even under the lower preponderance of the evidence standard, however, Respondents have failed to present sufficient evidence to overcome their burden of proof concerning the reduction to practice of the ISS

controller. Neither the testimony of the inventor nor the corroborative testimony of Respondents' other witnesses was persuasive on this matter.

I do not find even a preponderance of the evidence indicating that the ISS controller was reduced to practice prior to the constructive reduction to practice of the '129 patent. Thus, I cannot sustain Respondents' contention that claim 8 was anticipated by the ISS controller.

2. *Whether the '129 patent is invalid as obvious within the meaning of 35 U.S.C. § 103 (1980).*

Respondents contend that under section 103 both claims 1 and 8 are rendered invalid because the claimed inventions would have been obvious. They assert that the ALJ improperly narrowed the scope of the relevant prior art causing him to misdefine the person of ordinary skill in the art. I will consider each claim separately.

a. Claim 1[26]

Claim 1 deals with that part of the invention relating to the optical encoder. Respondent Sharp argues that the ALJ failed to consider the relevant prior art references in combination.[27] Sharp asserts that the relevant prior art for claim 1 was optical sensor and encoder art. The ALJ defined the person of ordinary skill as one having knowledge of control logic design for printing systems.[28] Sharp contends that this person of ordinary skill should also have knowledge of optical encoder design and that a person with such knowledge would have found the invention of claim 1 obvious over the three relevant prior art patents in combination.

After carefully considering the ID, I have concluded that the ALJ implicitly defined the person of ordinary skill in the art in the manner suggested by Sharp. The fact that the ALJ did not do so explicitly is unfortunate but it is harmless error.[29]

The ALJ examined the prior art dealing with feedback loops and optical encoders. He considered the prior art both separately and in combination. The ALJ stated,

> It is alleged that one of ordinary skill in the art could easily have constructed the electro-optical encoder device of claim 1 of the '129 patent, at the time the '129 device was made, by *combining* the concepts from the Dubauskas patent and/or the Holter patent with an optical encoder such as that of the Kocher patent.[30]

The ALJ proceeded to evaluate each of the patents separately and then in combination.[31] The ALJ concluded that the combination of the relevant prior art did not indicate that the claimed invention would have been obvious:

> Even assuming that the use of a feedback loop on a rotary optical position sensor was known during the relevant time period and that the need for compensating light sources, particularly LED light sources, for aging was known at the time of Grundherr's work on the '129 device, *the Dubauskas and Holter patents, in view of the Kocher patent* still have not been shown to render the '129 claim 1 device obvious to a person of ordinary skill in the art. . . . The principal evidence concerning the *relationship between these patents and the Grundherr optical encoder disc with feedback loop* is the testimony of Dr. Bernstein. Dr. Bernstein is self-professedly one of "superior" skill in the art. . . . On the other hand, a person of ordinary skill in the art, Mr. Beery, characterized Mr. Grundherr's encoder with the feedback loop as "super creative."[32]

In view of these findings by the ALJ, I conclude that he considered these patents in combination and found Mr. Grundherr's work a nonobvious improvement over them. The fact that the ALJ considered these patents in such depth indicates that he determined that knowledge of these fields would have been possessed by a person of ordinary skill in the art. The fact that he did not explicitly state this conclusion is harmless error.

Sharp contends that when these three patents are read in combination, it is evident that they reveal every element of claim

1. However, the courts have recognized that virtually all inventions are some combination of previously known elements.[33] Mr. Beery testified that the invention embodied in claim 1 was "super creative."[34] The ALJ found this testimony persuasive.[35] Moreover, the ALJ found "[t]he optical encoder design contributed to a smaller, faster, more reliable printer with fewer moving parts . . ." and thus contributed to the commercial success of the printer. Commercial success is an important secondary consideration on the question of obviousness.[36] This success, in conjunction with Mr. Berry's testimony and the thorough analysis of the prior art by the ALJ, provides sufficient support to uphold the ALJ.

It should be noted that the three patents discussed above were not considered in combination by the patent office. In fact, two of the patents apparently were not cited as prior art at all. In a recent district court case, however, it was once again reiterated that "all evidence, whether considered by the examiner or not, must be clear and convincing to prove facts capable of overcoming the presumption."[37] Respondent Sharp has not met this burden.

b. Claim 8

I adopt the ALJ's findings in upholding the validity of claim 8 under 35 U.S.C. § 103 (1980).

3. *Whether the '129 patent is invalid for failure to disclose "best mode" as required by 35 U.S.C. § 112 (1980).*

I concur with the majority in affirming the ALJ's decision to reject Respondents' argument that the '129 patent failed to disclose the best mode contemplated by the inventor.

4. *Whether the '129 patent is unenforceable by reason of inequitable conduct before the United States Patent and Trademark Office in connection with the patent applicant's alleged failure to disclose relevant prior art consisting of the Hy Type I printer and manual and certain optical encoders manufactured by Litton Disc.*[38]

a. Inequitable Conduct

The Patent Act of 1952 provides that unenforceability is a defense to a patent infringement suit.[39] Inequitable conduct before the Patent and Trademark Office renders a patent unenforceable in its entirety.[40]

In the parent patent application for the '129 patent, the patent examiner twice cited as prior art a patent (the '509 patent) that had been issued to Grundherr. Without any explanation to the patent attorney, however, the examiner made no reference to the '509 patent in the continuation application that resulted in the '129 patent. Apparently, the omission of the reference by the examiner was because the '509 patent and the '129 application had the same inventive entity (Grundherr). Respondents allege that the failure of the patent attorney to bring the commercial embodiment of the patent to the attention of the patent examiner constituted inequitable conduct. The ALJ found the alleged inequitable conduct in the instant case to be perhaps an "oversight or an erroneous judgment made in good faith."[41]

In *J.P. Stevens & Co., Inc. v. Lex Tex Ltd., Inc.*,[42] the CAFC held that to establish inequitable conduct, both "threshold materiality" and "threshold intent" must be shown. There, the applicants failed to disclose two patents, Weiss and DaGasso, that were "clearly important." After this finding of materiality, the court considered whether the requisite intent was present. The court noted that proof of "deliberate scheming" was not necessary; gross negligence was enough.[43] The court found that "[a]pplicants clearly should have known of the materiality of Weiss and DaGasso, especially after they took licenses under Weiss and its counterparts, had their foreign applications rejected on Weiss, and had similar claims in their virtually identical [earlier patent] application rejected on DaGasso."[44] The court found that even if this were not deliberate scheming. "there was clearly reckless or grossly negligent activity."[45]

In order to find inequitable conduct, there must be clear and convincing evidence that the two thresholds have been met.[46]

The evidence before me is insufficient to justify overruling the ALJ's determination with respect to intent. There seems to be little doubt that if the '509 patent was not a proper reference, then the Hy Type printer and manual were the most material prior art.[47] However, the ALJ found, and I agree, that arguably section 304 of the Manual of Patent Examining Procedure could be read to indicate that the prior application of the same inventor may become a prior art reference to a second application, if the first one has been assigned. This rule only applies when the applications are copending, as was the case here for the period between July 1, 1974 and January 7, 1975. This rule raises the question as to whether the printer and manual were material prior art.

I have two other concerns. First, there is some evidence on the record that the patent attorney did not know of the commercial embodiment of the '509 patent (the Hy Type I printer and/or maintenance manual) during prosecution of the '129 patent.[48] An attorney will not be held to the knowledge of the inventor where the inventor is not knowledgeable about patent law.[49] Second, the examiner cited the '509 patent twice. Was the examiner grossly negligent in these acts? Does reliance on the examiner constitute gross negligence? I am not prepared to answer either of these questions in the affirmative. The line between gross negligence and negligence is far from clear.[50] The ALJ had the parties before him and believed the patent attorney, concluding that the error may have been simple negligence or oversight. I concur with the ALJ and therefore am unable to find clear and convincing evidence of inequitable conduct by the patent attorney prosecuting the '129 patent.

b. I join the majority in its determination not to reverse the ALJ's decision concerning the purchase of the optical discs from Litton and Disc.

5. *Whether the devices manufactured and imported by Respondents infringe claim 8 of the '129 patent?*[51]

I would affirm the ALJ's determination that file wrapper estoppel does not limit the range of equivalents for independent

claim 8.[52] At issue are remarks directed toward claims 8-14, made by the patent attorney during prosecution of the '129 patent. Respondents contend that the remarks should be read to apply to claim 8, thereby limiting coverage of the claim to situations where the print wheel is in position before the hammer intensity information is fetched.

In view of the language of claim 11 that provides specifically for this limitation, I would affirm the ALJ's finding that these remarks did not apply to claim 8. I do not base this conclusion on the ALJ's finding that it was "unnecessary" for the patent attorney to restrict claim 8. Courts do not speculate whether a particular claim limitation is necessary to overcome a prior art rejection by the examiner.[53] Rather, I refuse to assume that the particular remark in question was directed toward claim 8 when no amendment to claim 8 was made and the limiting language is in fact found in claim 11.[54] In *D.M.I., Inc., v. Deere & Co.*,[55] the alleged infringer argued that a restriction present in a dependent claim also applied to the independent claim. The CAFC reiterated, "Where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad whether to avoid invalidity or to escape infringement."[56] The court noted that the prosecution history of the application should be used to interpret the patent, but that there was nothing in the file wrapper to sugges the limitation argued by the alleged infringer.[57]

Claim 8 of the '129 patent was amended to overcome a specific prior art objection. The amendment explicitly stated that the improvement in claim 8 was a memory device with a first portion and a second portion and a means for sequentially accessing these portions. Nothing in claim 8 refers to whether the printer must be stationary before the hammer intensity is fetched. The remarks by the patent attorney are ambiguous as to whether the limitation applies to claim 8. This limitation is present in the narrow claim. Following *D.M.I.*, I decline to read this limitation into claim 8 on the basis of the record before me. Complainant is not attempting to regain subject matter surrendered during the prosecution of the patent application.

The purpose behind the doctrine of file wrapper estoppel is to provide knowledge to the public. Files are open to the public. By looking at the file, a potential competitor can determine whether his product would be covered by the claims. Patent language is sometimes ambiguous, so it is often necessary to explore the rationale behind changes that are made to understand fully the nature of the improvements embodied in the claims.[58]

In *Kinzenbaw v. Deere & Co.*,[59] the applicant added a limitation to his claim in response to a rejection by the patent examiner based on a cited reference. Although the claim might have been allowed with a narrower limitation, nevertheless the broad limitation was made. Thus, the court found Deere offered "no convincing reason why a competing manufacturer was not justified in assuming that if he built a planter in which the radius of the wheels was greater than that of the disc, he would not infringe the Pust patent."

Conversely, in the instant case, in reading the patent, a competing manufacturer would have no reason to believe that claim 8 only applied to devices in which the rotary wheel was in position before the hammer intensity information was fetched. The remarks found in the file clearly relate to the subject matter in claim 11.[60] Thus, this case is one in which the principles used in finding equivalence are properly invoked "to protect inventors from unscrupulous copyists and unanticipated equivalents."[61]

I would also affirm the ALJ's determination that claim 8 does not limit the memory device to a single-chip device having only two portions for storing data. The memory device in the Triumph-Adler typewriters are the equivalent of that called for under the '129 patent.

I, therefore, would affirm the ALJ's determination that Respondents Sharp, Nakajima and Triumph-Adler all infringe the '129 patent.

6. *Whether the importation or sale of Respondents' devices has the effect or tendency to destroy or substantially injure an "industry, . . . in the United States."*

a. Joinder of the Rotary Wheels I and Rotary Wheels II Investigations and Segmentation of the Market[62]

The ALJ determined that the domestic industry consisted of Complainant's operations in San Jose, California and Puerto Rico "devoted to the exploitation of the patent,."[63] Some manufacturing, engineering and marketing takes place in the San Jose facility. Most domestic manufacturing occurs in Puerto Rico.[64] Since the filing date of the petition in the instant case, there has been no manufacturing by Complainant of low speed printers utilizing the '129 patent. In 1983, during the pendency of Rotary Wheels I, a low speed printer was produced in Puerto Rico. The ALJ determined that Rotary Wheels II was essentially an extension of Rotary Wheels I and that the manufacturing of the low speed printer should be recognized as part of the domestic activity affected by the imports subject to this investigation. In addition, the ALJ aggregated the imports of the Respondents that settled in both Rotary Wheels I and Rotary Wheels II together with the imports of the nonsettling Respondents in Rotary Wheels II.

I do not reach the issue of the relevant time frame, nor the issue of aggregation, in this case. The statute directs the Commission to remedy unfair acts "the effect or tendency of which is to destroy or substantially injure *an industry . . . in the United States*. . . ."[65] The legislative history to the Trade Reform Act of 1974 states that "Commission precedent, approved by the CCPA, establishes that the importation or domestic sale without license from the patent owner of articles manufactured abroad in accordance with the invention disclosed in an unexpired U.S. patent constitutes an unfair method of competition or unfair act within the meaning of section 337."[66] Nowhere in the statute or the legislative history is there any indication that the Commission should engage in the same like product/domestic industry analysis that is required by statute in Title VII and escape clause cases. In dumping and subsidy cases, the Commission

must determine the producers of the *like product*, defined as the domestic product that is "like, or in the absence of like, most similar in characteristics and uses with the article . . ." subject to investigation.[67]

The anti-dumping and subsidy laws go into great detail as to what to look for in terms of injury. For example, decreased production or capacity utilization, price suppression, lost profits, and reduced employment are among the factors to be considered. In order to evaluate any of these criteria, it is necessary to define a domestic industry. As noted above, the statute provides such a definition.

Section 337 enumerates no such laundry list. There is no need for such a precise definition of domestic industry. As the CAFC noted in *Bally/Midway Mfg. Co. v. USITC*,[68] Congress "enacted section 337 to 'prevent every type and form of unfair practice' and to provide 'a more adequate protection to American industry than any anti-dumping statute the country has ever had. . . .'"

Viewed in opposition to Title VII, there is an implicit recognition within the statutory framework of Section 337 that patents can be exploited in many ways. Such exploitation would quickly test the bounds of like product within Title VII. This is precisely why no such limitation exists in Section 337.

A Section 337 analysis need not address the issue of competitive products. To the extent that the products are directly competitive, the substantial injury may appear in the form of lost sales or depressed prices. If the products are not directly competitive, the tendency to injure appears in the form of lost royalties and the loss of the choice as to how one will exploit one's own property right. From a policy standpoint, neither of these considerations should be neglected. Inventiveness, and hence progress, depends on the protection of property rights. Moreover, a strict construction of the statute indicates that Congress, at the very least, does not want an analysis similar to that found in Title VII. I suggest that the appropriate definition of a domestic industry would include all forms of exploitation of a domestic patent.

For instance, in the present case the patent can be exploited in word processing systems or typewriters, in fast machines or slow machines. The inquiry in Title VII would commence with a discussion of the domestic products that are "like" the imports. Such an inquiry is required by Title VII, but not by Section 337. Complainant argues that the printers and typewriters do n ot constitute independent economic product markets, but rather, the market consists of a continuum, with its products in the middle to high range of the market. I agree with Complainant that its domestic product does indeed compete with the imports. I believe, however, that this finding is unnecessary because the exploitation of the '129 patent need not occur in the same market segment as the imports.[69] Therefore, I do not reach the issue of the appropriate time frame for this investigation.

b. Aggregation of Imports of Settled Respondents

The ALJ included imports from settled Respondents in Rotary Wheels I and II in reaching his conclusion that the effect or tendency of Respondents' unfair acts is to destroy or substantially injure the domestic industry. Because I find that the imports of infringing printers and typewriters by remaining Respondents are sufficient to justify the finding of a violation of Section 337.[70] I do not reach this issue.

c. Substantial Injury and Tendency to Substantially Injure

Complainant is the owner of the patent rights under the '129 patent and is, therefore, entitled to sell, license to sell, or prevent sales of devices that exploit the patent. Respondents have made substantial sales of devices that infringe the '129 patent. I would, therefore, affirm the result reached by the ALJ in finding that the imports by Respondents cause substantial injury and a tendency to injure the domestic industry.

FOOTNOTES

1. To avoid unnecessary repetition, I will only restate the procedural history of this case and the technical aspects of the patent where absolutely necessary. The background is well-documented in the ID.

2. Rule § 210.54, 19 C.F.R. Chap. II. (1984). Review is granted at the request of one Commissioner.

3. The Commission can "make any finding or conclusions which in its judgment are proper based on the record in the proceeding." Rule § 210.56, 19 C.F.R. Chap. II (1984).

4. The adjudicative provisions of the Administrative Procedure Act (APA) govern Section 337. The APA provides: "On appeal from or review of the initial decision, the agency has all the powers which it would have in making the initial decision except as it may limit the issues on notice or by rule." 5 U.S.C. § 557(b) (1980).

5. At the oral hearing before the Commission, the attorney representing the ITC's Office of Unfair Import Investigations stated:

> In this particular case, the patent is a pretty complex electronic patent which certainly this staff member and the staff as a whole did not have the capability to master that technology in order to do the job that would have to be done if we were to take a position in this investigation.

Transcript at 106, Oral Argument In re Certain Rotary Wheel Printing Systems, Inv. No. 337-TA-185 (May 28, 1985). The staff attorney will typically spend as much time investigating the case as the ALJ.

6. For purposes of the discussion of reduction to practice, I assume *arguendo* that the Zodiac system shows every element of claim 8 and the Zodiac was not abandoned, suppressed, or concealed within the meaning of section 102(g). I make no determination on these issues.

7. ID at 211.

8. Kimberly-Clark Corp. v. Johnson & Johnson, 745 F.2d 1437, 1445-46 (Fed. Cir. 1984); Full Mold Process v. Central Iron Foundry, 489 F. Supp. 893, 899 (E.D. Mich. 1980); I. Kayton, Kayton on Patents 4-23 (2d ed. 1983).

FOOTNOTES

9. ID at 31.

10. The ALJ made several references to the controller that indicate he was not prepared to find that the controller was reduced to practice. For instance, he states, "Lastly, respondents cite to Xerox's Zodiac system with its ISS controller and Mark 1 printer as being prior art, in that it was *allegedly* conceived and reduced to practice in 1971." ID at 88. The ALJ at one point assumes *arguendo* that the ISS controller might have been reduced to practice, but goes no farther. ID at 89. The ALJ does indicate that Mr. Grundherr designed a controller as an interface between an external data source and the Mark I printer so that the printer could be tested. This unit bore no resemblance to the ISS controller. The ALJ concludes that "the evidence shows he could check out the functions of the Mark I without having access to the ISS control unit." ID at 32 n.3. This last sentence could be read to presuppose the existence of the ISS controller, but it is ambiguous in light of the ALJ's hesitation to find a reduction to practice.

11. 35 U.S.C. § 282 (1980); Atlas Powder Co. v. E.I. DuPont De Nemours, 750 F.2d 1563. 1573 (Fed. Cir. 1984).

12. American Hoist & Derrick Co. v. Sons, Inc., 725 F.2d 1350, 1359-60 (Fed. Cir), *cert. den.* ____ U.S. ____, 105 S. Ct. 95 (1984); Hycor Corp. v. Schlueter Co., 740 F.2d 1529, 1536-37 (Fed. Cir. 1984).

13. *See, e.g.*, Brief of Respondents Sharp Corp. and Sharp Electronics Corp. for Review of Initial Determination at 25-26, Brief of Respondent Nakajima All Co., Ltd. on the Patent Issues Under Review at 13-15.

14. Transcript at 1899, 1902.

15. Transcript at 2040 (emphasis added).

16. This was the date of constructive reduction to practice for the '129 patent. Complainant argued that the actual reduction to practice occurred earlier. I need not reach this issue.

17. In Ralston Purina Co. v. Far-Mar-Co., Inc., 586 F. Supp. 1176 (D. Kan. 1984), the court held that an actual prior reduction to

(footnote continued)

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FOOTNOTES

practice must be independently corroborated in all situations and by evidence other than by the testimony of the alleged inventor or by documents originating from him. Thus, the alleged inventor's notebooks unsigned by witnesses and weekly progress reports by inventors to their superiors do not provide independent corroboration of prior reduction to practice because they are merely self-serving declarations. Moreover, the court found that even a statement by a witness with general knowledge about the products being used as starting materials and the thrust of the experimentation, and who was present at the time of the testing, is insufficient corroboration of prior reduction of a process for making protein product. The court noted that this independent corroboration test, while generally required to obtain priority in an interference proceeding, is also required to establish a reduction to practice of prior art to invalidate a patent. *See also* Reese v. Hurst, 661 F.2d 1222, 1225 (CCPA 1981); Velsicol Chemical Corp. v. Monsanto Co., 579 F.2d 1038, 1048 (7th Cir. 1978) (facts of case required greater corroborative evidence than that supplied by inventor's testimony and notebook pages and by testimony and reports of his supervisor based entirely on information received from the inventor); In re Reuter, 670 F.2d 1015, 1022 (CCPA 1981) ("We agree with appellant that Poynter's [the inventor] uncorroborated statements regarding his alleged prior invention are entitled to no weight"). It is interesting to note that *In re Reuter* was cited by Respondent Sharp as support for the proposition that independent corroboration was unnecessary. Reply Brief of Respondent Sharp, at 4 (May 10, 1985).

18. Transcript at 1878, Exhibit 126C.

19. Transcript at 1883 ( ).

20. Transcript at 1898.

21. *E.g.*, Berges v. Gottstein, 618 F.2d 771, 774-75 (C.C.P.A. 1980).

22. *Id.*; Donohue v. Baudry, 223 U.S.P.Q. 823, 826-27 (PTO Bd. Pat. Int'f 1984) (inventor's notebook was periodically witnessed by coworkers who were familiar with the inventor's work).

23. One memorandum of record indicates

(footnote continued)

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FOOTNOTES

." Exh. Rxt-98C ( ). Because the Zodiac/Mark I system was still in testing as of January 1973 (prototypes of the Mark I were still being built (*See* Exh. Rxt-103C), it is unclear how a customer could already own the Zodiac system. Moreover, the term controller seems to have had several different meanings in this investigation. The control logic embodied in claim 8 does not deal with " ." Thus, this controller may not be the one at issue in this case. Finally, in this same memorandum, two paragraphs later, the author notes, "

[sic]."
Although reduction to practice does require clear and convincing evidence. The memoranda presented to the ALJ fall short.

24. In Lacotte v. Thomas, 758 F.2d 611 (Fed. Cir. 1985), the junior party provided independent evidence to the Board of Patent Interferences to corroborate the inventor's testimony and notebook entries with respect to the process invented for replicating video discs. This evidence, in part, consisted of testimony by one of the inventor's research associates that supplied the inventor with materials necessary to practice the invention. Another research associate testified that he examined replicate media that had been contact printed by the process. *Id.* at 612. The CAFC stated that "the combination of such corroborating testimony and independent circumstantial evidence within an organized research program was more than adequate . . ." to sustain the Board. *Id.* at 613. *Contra* In re Reuter, 670 F.2d 1015, 1021 n.9 (CCPA 1981) (Clear and convincing evidence of prior invention required in interference case); Suitzer v. Etzel, 531 F.2d 1062, 1065 (CCPA 1976).

25. 586 F. Supp. at 1212.

26. Commissioner Lodwick concurs with Vice Chairman Liebeler regarding this issue.

27. Brief of Sharp on Review at 41, 43-47.

28. ID at 57 (FF 102), 214.

FOOTNOTES

29. It would have been better to remand this issue to the ALJ but due to statutory time constraints, this option was unavailable.

30. ID at 63 (FF 109) (emphasis added).

31. ID at 63-70.

32. ID at 69 (FF 117) (emphasis added).

33. *See, e.g.*, Environmental Designs Ltd. v. Union Oil Co., 713 F.2d 696, 698 (Fed. Cir. 1983), *cert. den.*, ___ U.S. ___, 104 S. Ct. 709 (1984).

34. The ALJ noted that Mr. Beery, an employee of ITT, the parent corporation of Qume, and Mr. Grundherr, the inventor of the '129 device, were both interested parties. The ALJ found their testimony credible in view of corroborating testimony from one of Respondents' witnesses. ID at 56 n.6.

35. Mr. Grundherr was questioned by Sharp on this subject at the hearing:

> Q So you took standard components and combined them in a standard way with a standard feedback loop to add to a standard optical encoder? Isn't that correct?
>
> A Yes, but it was never done before with an optical encoder as far as I know.

Transcript at 792.

36. Graham v. John Deere Co., 383 U.S. 1 (1966).

37. Ralston Purina Co. v. Far-Mar-Co. Inc., 586 F. Supp. 1176, 1212 (D. Kan. 1984) (citing American Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1360 (Fed. Cir. 1984) and Connell v. Sears. Roebuck & Co., 722 F.2d 1542, 1549 (Fed. Cir. 1983)).

38 Commissioner Lodwick concurs with Vice Chairman Liebeler regarding this issue.

39. 35 U.S.C. § 282 (1980).

FOOTNOTES

40. *See* J.P. Stevens & Co., Inc. v. Lex Tex Ltd., Inc., 747 F.2d 1553, 1561 (Fed. Cir. 1984).

41. ID at 222 (quoting Orthopedic Equipment Co. v. All Orthopedic Appliances, 707 F.2d 1376, 1383 (Fed. Cir. 1983)).

42. 747 F.2d 1553 (Fed. Cir. 1984).

43. *Id.* at 1560.

44. *Id.* at 1567.

45. *Id.* at 1567.

46. 747 F.2d at 1559, 1564.

47. ID at 221.

48. Transcript at 1135.

49. Kansas Jack, Inc., v. Kuhn, 719 F.2d 1144, 1152 (Fed. Cir. 1983); In re Kubicek, 200 USPQ 545 (Comm'r Pat. & Tm. 1978).

50. In *J.P. Stevens*, the court stated that "gross negligence is present when the actor, judged as a reasonable person in his position, should have known of the materiality of a withheld reference." 747 F.2d at 1560. Although the court says that it is defining gross negligence, its definition corresponds with that of negligence. The court however goes on to conclude that simple negligence, oversight, or a good faith error of judgment are insufficient proof of intent. This seems to be inconsistent. *See also* Argus Chemical Corp. v. Fibre Glass-Evercoat Co., Inc., Appeal No. 84-1418 (Fed. Cir. Apr. 4, 1985).

51. The Commission was especially interested in the effect, if any, of prosecution history estoppel on the question of infringement under the doctrine of equivalents.

52. The doctrine of equivalents provides that infringement will not be avoided if the device "performs substantially the same function in substantially the same way to obtain the same result." Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co., 399 U.S. 605, 608 (1958).

(footnote continued)

FOOTNOTES

A means plus function claim, such as claim 8, is construed to cover the corresponding structure, material or acts described in the specification and equivalents thereof. 35 U.S.C. 112 (1980). File wrapper estoppel is used to limit the range of equivalents. Hughes Aircraft Corp. Co. v. United States, 717 F.2d 1351, 1362 (Fed. Cir. 1983); Palumbo v. Don-Joy Co., Appeal No. 84-1691 (Fed. Cir. May 20, 1985).

53. *See* Prodyne Enterprises, Inc. v. Julie Pomerantz, Inc., 743 F.2d 1581, 1583 (Fed. Cir. 1984); Kinzenbaw v. Deere & Co., 741 F.2d 383, 389 (Fed. Cir. 1984).

54. ID at 118 (FF215), 235.

55. 755 F.2d 1570.

56. *Id.* at 1574 (quoting Deere & Co. v. Int'l Harvester Co., 658 F.2d 1137, 1141 (7th Cir.), *cert. den.*, 454 U.S. 969 (1981).

57. *Id.* at 1574 n.2. *See also* Palumbo v. Don-Joy Co., Appeal No. 84-1691 at 15 (Fed. Cir. May 20, 1985).

58. Kinzenbaw v. Deere & Co., 741 F.2d 383 (Fed. Cir. 1984).

59. *Id* at 389.

60. Complainant argues that the ambiguity in the patent attorney's remarks is removed if one views them as merely descriptive of one embodiment of the '129 patent. In Vulcan, Inc. v. Fordees Corp., 211 USPQ 852, 860 (6th Cir. 1981), the court stated, "Although the file history does contain certain remarks that stress base support means, we need not infer an intention that the remarks are exclusive. Those statements were made in an effort to describe the device and to distinguish the prior art generally, rather than to distinguish the prior art in terms of patentability." There is some reason to believe that the remarks in the instant case were descriptive both because they were unnecessary to achieve patentability over prior art and because the limitation is present in claim 11.

61. 741 F.2d at 389 (citations omitted). Complainant correctly points out that *Builders Concrete, Inc.*, v. *Bremerton Concrete Products Co.*, Appeal No. 84-1292 (Fed. Cir. Mar. 4, 1985), is not to the

– *(footnote continued)*

FOOTNOTES

contrary. In *Builders*, the applicant amended his claim 1 to overcome prior art objections, but made no amendment to claim 10, the claim in suit. The court held:

> The fact that the "passage" clause of patent claim 10 was not itself amended during prosecution does not mean that it can be extended by the doctrine of equivalents to cover the precise subject matter that was relinquished in order to obtain allowance of claim 1. It is clear from the prosecution history that the allowance of claim 11, the float, depended on the amendment narrowing its "passage" definition to that of claim 10.

Id. at 10. In the instant case, no limiting amendment was made to the broad claim and hence *Builders* is inapposite.

62. Qume was also Complainant in an earlier investigation involving exploitation of the same patent. Certain Rotary Wheel Printers, Inv. No. 337-TA-145. There were different respondents in that case. The petition for that investigation was filed in March 1983. For purposes of this section, the first investigation will be referred to as Rotary Wheels I and the instant investigation as Rotary Wheel II.

63. ID at 239.

64. In addition, Complainant has a licensing agreement with a Japanese firm and a Taiwanese firm. ID at 153-64.

65. Section 337, Tariff Act of 1930, 19 U.S.C. § 1337(a) (1980).

66. Trade Reform Act of 1973, H.R. 571, 93d Cong. 1st Sess. 78 (1973).

67. Tariff Act of 1930, 19 U.S.C. 1677(10). *See also* Section 201(b)(1), 19 U.S.C. 2251(b)(1) (1980) (Escape Clause).

68. 714 F.2d 1117, 1124 (Fed. Cir. 1983) (quoting S. Rep. No. 595, 67th Cong. 2d Sess. 3 (1922).

69. The ALJ excluded certain of Respondents' typewriter models from his finding of violation because they were not interfaceable with word processing systems. This determination is not presently before the Commission for review.

STATUTES INVOLVED

5 U.S.C. § 706. Scope of review

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall --

* * *

(2) hold unlawful and set aside agency action, findings, and conclusions found to be --

* * *

(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute;

19 U.S.C. § 1337. Unfair practices in import trade

(a) Unfair methods of competition declared unlawful

Unfair methods of competition and unfair acts in the importation of articles into the United States, or in their sale by the owner, importer, consignee, or agent of either, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States, or to prevent the establishment of such an industry, or to restrain or monopolize trade and commerce in the United States, are declared unlawful, and when found by the Commission to exist shall be dealt with, in addition to any other provisions of law, as provided in this section.

(b) Investigation of violations by Commission; time limits

(1) The Commission shall investigate any alleged violation of this section on complaint under oath or upon its initiative. Upon commencing any such investigation, the

Commission shall publish notice thereof in the Federal Register. The Commission shall conclude any such investigation, and make its determination under this section, at the earliest practicable time, but not later than one year (18 months in more complicated cases) after the date of publication of notice of such investigation. The Commission shall publish in the Federal Register its reasons for designating any investigation as a more complicated investigation. For purposes of the one-year and 18-month periods prescribed by this subsection, there shall be excluded any period of time during which such investigation is suspended because of proceedings in a court or agency of the United States involving similar questions concerning the subject matter of such investigation.

(2) During the course of each investigation under this section, the Commission shall consult with, and seek advice and information from, the Department of Health and Human Services, the Department of Justice, the Federal Trade Commission, and such other departments and agencies as it considers appropriate.

(3) Whenever, in the course of an investigation under this section, the Commission has reason to believe, based on information before it, that a matter, in whole or in part, may come within the purview of section 1303 of this title or of part II of subtitle IV of this chapter, it shall promptly notify the Secretary of the Treasury so that such action may be taken as is otherwise authorized by such section and such part II. If the Commission has reason to believe the matter before it is based solely on alleged acts and effects which are within the purview of section 1303, 1671, or 1673 of this title, it shall terminate, or not institute, any investigation into the matter. If the Commission has reason to believe the matter before it is based in part on alleged acts and effects which are within the purview of section 1303, 1671, or 1673 of this title, and in part on alleged acts and effects which may, independently from or in conjunction with those within the purview of such section,

establish a basis for relief under this section, then it may institute or continue an investigation into the matter. If the Commission notifies the Secretary or the administering authority (as defined in section 1677(1) of this title) with respect to a matter under this paragraph, the Commission may suspend its investigation during the time the matter is before the Secretary or administering authority for final decision. For purposes of computing the 1-year or 18-month periods prescribed by this subsection, there shall be excluded such period of suspension. Any final decision of the Secretary under section 1303 of this title or by the administering authority under section 1671 or 1673 of this title with respect to the matter within such section 1303, 1671, or 1673 of this title of which the Commission has notified the Secretary or administering authority shall be conclusive upon the Commission with respect to the issue of less-than-fair-value sales or subsidization and the matters necessary for such decision.

(c) Determinations; review

The Commission shall determine, with respect to each investigation conducted by it under this section, whether or not there is a violation of this section. Each determination under subsection (d) or (e) of this section shall be made on the record after notice and opportunity for a hearing in conformity with the provisions of subchapter II of chapter 5 of title 5. All legal and equitable defenses may be presented in all cases. Any person adversely affected by a final determination of the Commission under subsection (d), (e), or (f) of this section may appeal such determination, within 60 days after the determination becomes final, to the United States Court of Appeals for the Federal Circuit for review in accordance with chapter 7 of title 5. Notwithstanding the foregoing provisions of this subsection, Commission determinations under subsections (d), (e), and (f) of this section with respect to its findings on the public health and welfare, competitive conditions in the United States economy, the production of like or directly

competitive articles in the United States, and United States consumers, the amount and nature of bond, or the appropriate remedy shall be reviewable in accordance with section 706 of title 5.

(d) Exclusion of articles from entry

If the Commission determines, as a result of an investigation under this section, that there is violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States, unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such articles should not be excluded from entry. The Commission shall notify the Secretary of the Treasury of its action under this subsection directing such exclusion from entry, and upon receipt of such notice, the Secretary shall, through the proper officers refuse such entry.

(e) Exclusion of articles from entry during investigation except under bond

If, during the course of an investigation under this section, the Commission determines that there is reason to believe that there is a violation of this section, it may direct that the articles concerned, imported by any person with respect to whom there is reason to believe that such person is violating this section, be excluded from entry into the United States, unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such articles should not be excluded from entry. The Commission shall notify the Secretary of the Treasury of its action under this

subsection directing such exclusion from entry, and upon receipt of such notice, the Secretary shall, through the proper officers, refuse such entry, except that such articles shall be entitled to entry upon bond determined by the Commission and prescribed by the Secretary.

(f) Cease and desist orders; civil penalty for violation of orders

(1) In lieu of taking action under subsection (d) or (e) of this section, the Commission may issue and cause to be served on any person violating this section, or believed to be violating this section, as the case may be, an order directing such person to cease and desist from engaging in the unfair methods or acts involved, unless after considering the effect of such order upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such order should not be issued. The commission may at any time, upon such notice and in such manner as it deems proper, modify or revoke any such order, and, in the case of a revocation, may take action under subsection (d) or (e) of this section, as the case may be.

(2) Any person who violates an order issued by the Commission under paragraph (1) after it has become final shall forfeit and pay to the United States a civil penalty for each day on which an importation of articles, or their sale, occurs in violation of the order of not more than the greater of $10,000 or the domestic value of the articles entered or sold on such day in violation of the order. Such penalty shall accrue to the United States and may be recovered for the United States in a civil action brought by the Commission in the Federal District Court for the District of Columbia or for the district in which the violation occurs. In such actions, the United States district courts may issue mandatory injunctions incorporating the relief sought by

the Commission as they deem appropriate in the enforcement of such final orders of the Commission.

(g) Referral to President

(1) If the Commission determines that there is a violation of this section, or that, for purposes of subsection (e) of this section, there is reason to believe that there is such a violation, it shall --

(A) publish such determination in the Federal Register, and

(B) transmit to the President a copy of such determination and the action taken under subsection (d), (e), or (f) of this section, with respect thereto, together with the record upon which such determination is based.

(2) If, before the close of the 60-day period beginning on the day after the day on which he receives a copy of such determination, the President, for policy reasons, disapproves such determination and notifies the Commission of his disapproval, then, effective on the date of such notice, such determination and the action taken under subsection (d), (e), or (f) of this section with respect thereto shall have no force or effect.

(3) Subject to the provisions of paragraph (2), such determination shall, except for purposes of subsection (c) of this section, be effective upon publication thereof in the Federal Register, and the action taken under subsection (d), (e), or (f) of this section, with respect thereto shall be effective as provided in such subsections, except that articles directed to be excluded from entry under subsection (d) of this section or subject to a cease and desist order under subsection (f) of this section shall be entitled to entry under bond determined by the Commission and prescribed by the Secretary until such determination becomes final.

(4) If the President does not disapprove such determination within such 60-day period, or if he notifies the Commission before the close of such period that he approves such determination, then, for purposes of paragraph (3) and subsection (c) of this section such determination shall become final on the day after the close of such period or the day on which the President notifies the Commission of his approval, as the case may be.

(h) Period of Effectiveness

Except as provided in subsections (f) and (g) of this section, any exclusion from entry or order under this section shall continue in effect until the Commission finds, and in the case of exclusion from entry notifies the Secretary of the Treasury, that the conditions which led to such exclusion from entry or order no longer exist.

(i) Importation by or for United States

Any exclusion from entry or order under subsection (d), (e), or (f) of this section, in cases based on claims of United States letters patent, shall not apply to any articles imported by and for the use of the United States, or imported for, and to be used for, the United States with the authorization or consent of the Government. Whenever any article would have been excluded from entry or would not have been entered pursuant to the provisions of such subsections but for the operation of this subsection, a patent owner adversely affected shall be entitled to reasonable and entire compensation in an action before the United States Claims Court pursuant to the procedures of section 1498 of title 28.

(j) Definition of United States

For purposes of this section and sections 1338 and 1340 of this title, the term "United States" means the customs territory of the United States as defined in general headnote 2 of the Tariff Schedules of the United States.

35 U.S.C. § 102(g). Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless --

* * *

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

35 U.S.C. §103. Conditions for patentability; non-obvious subject manner

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.